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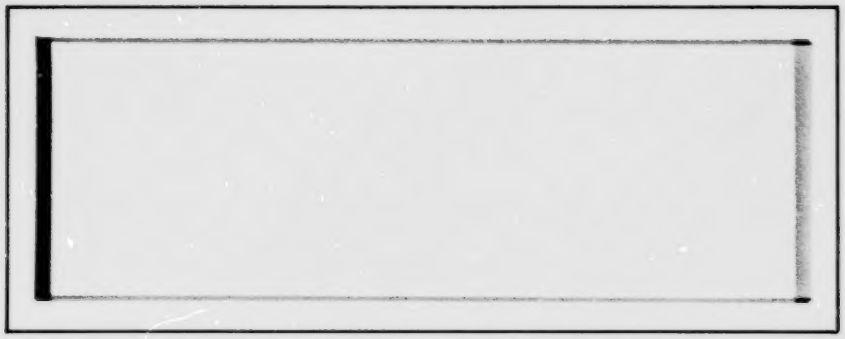

WORKING PAPER

Marketing and Economics Branch

Direction générale de la commercialisation et de l'économie

Working papers are (1) interim reports completed by the staff of the Marketing & Economics Branch, and (2) research reports completed under contract. The former reports have received limited review, and are circulated for discussion and comment. Views expressed in these papers are those of the author(s) and do not necessarily represent those of Agriculture Canada.

EVOLUTION OF THE PRIMARY ELEVATOR SYSTEM IN WESTERN CANADA

(Working Paper 14/84)

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FOREWORD

In an effort to improve the efficiency of the Western grain handling and transportation system, the federal government passed the Westen Grain Transportation Act on November 14, 1983. The Act makes provision for a comprehensive review of its operation in the 1985-86 crop year. As part of the review process, a Committee of Inquiry was established to examine all matters that, in its opinion, pertain to the method of payment of the Crow Benefit. This report has been done to provide the Committee with background information on the elevator system in Western Canada.

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I am especially indebted to Mr. Alan Turner whose help was invaluable in the development of the numerous charts presented in this report.

Of course, full responsibility for the use of the data and information of the report rests with the author.

TABLE OF CONTENTS

PAGE

FOREWORD i

ACKNOWLEDGEMENTS ii

EXECUTIVE SUMMARY viii

CHAPTER 1

1. Introduction 1

CHAPTER 2

2. Origin of the Grain Handling System in Western Canada and Current Functions of Primary Elevators 4

2.1 Functions of Primary Elevators 5
2.2 Railway Development 9
2.3 Evolution of the Primary Elevator System 12

CHAPTER 3

3. De elopments in the Primary Elevator System 1935-60 18

3.1 Primary Elevator System Configuration 1935-60 18
3.2 Evolution of the Canadian Wheat Board and Its Market Strategy 22
3.3 The Federal Government's Policy on Grain Storage 29
3.4 Revenue Source of Primary Elevators 31

CHAPTER 4

4. Primary Elevator System Configuration 1961-1975 35

4.1 Primary Elevator System Consolidation 1961-75 35
4.2 Institutional Change and Adjustment 47
4.2.1 Block Shipping System 48
4.2.2 Quota System 51
4.2.3 Tariffs 51
4.3 Elevator Costs and Revenues 54
4.4 Cost Control 56
4.4.1 Saw-Offs 57
4.4.2 Mergers 57
4.4.3 Unilateral Closures 58
4.4.4 Operational Changes 59

PAGE

CHAPTER 5

5. Recent Trends in the Rationalization Process 1976-1983 .. 61

5.1 Recent Trends in Elevator Consolidation 61
5.2 Primary Elevator Ownership 71
5.3 Rationalization and Competition 78
5.4 Handling Performance 85
5.5 Branchline Abandonment 91
5.6 Primary Elevator Costs and Revenues 96

CHAPTER 6

6. Future Trends 100

FOOTNOTES 104

BIBLIOGRAPHY 109

CHARTS AND TABLES

PAGE

CHARTS

i Number of Elevators 1900-1990 xv

ii Total and Average Capacity 1900-1990 xvi

1 Elevators, Delivery Points and Operating Units 36

2 Elevator Total and Average Capacity 1961-1975 38

3 Capacity and Receipts 1961-1975 39

4 Turnover Rates 1961-1975 40

5 Elevator Distribution by Province 1961-1975 41

6 Delivery Point Competition by Province 1961-1975 46

7 Elevators, Delivery Points and Operating Units 1976-1983 62

8 Total and Average Capacity 1976-1983 64

9 Elevator Distribution by Province 1983 66

10 Delivery Points by Receipts 1982 81

11 Average Receipts 1976-1982 87

12 Turnover Rate 1976-1982 88

TABLES

1 Rail Miles of Track 1906-1935 12

2 Primary Elevators and Flat Warehouses in Western Canada 1900-1935 14

3 Primary Elevator Configuration 1935-1960 19

4 Primary Elevators in Manitoba 1935-1960 21

5 Primary Elevators in Saskatchewan 1935-1960 21

6 Primary Elevators in Alberta/BC 1935-1960 21

TABLES (cont'd)

7 Licensed Public Country Storage Facilities in Western Canada 28

8 Carrying Cost of Wheat and Temporary Wheat Reserves Act Contributions 30

9 Estimated Handling and Storage Revenues for Primary Elevator System 33

10 Primary Elevator Configuration 1961-1975 37

11 Primary Elevator Turnover Ratios 1960-1975 40

12 Spatial Distribution of Primary Elevators 1961-1975 42

13 Primary Elevator Competition 1961-1975 44

13A Provincial Breakdown of Primary Elevator Competition 1961-1975 45

14 Estimated Handling and Storage Revenue for Primary Elevator System 1961-1975 53

15 Profit (Loss) Position of Primary Elevators 1967-1972 56

16 Primary Elevator Characteristics 1976-1983 63

17 Spatial Distribution of Primary Elevators 1977-1983 65

18 Largest Elevators by Size, Company and Location 69

19 Licensed Primary Elevators in Western Canada by Firm, Storage Capacity and Location December 1, 1982 ... 70

20 Primary Elevators by Firm, 'Operating Units', and Spatial Distribution as of December 1, 1983 74

21 Elevator Consolidation by Firm 76

22 Operating Unit Consolidation by Firm 77

23 Primary Elevator Competition 1976-1983 79

24 Distribution of Companies at Delivery Points 1982-1983 80

25 Volume of Grain Received at Primary Delivery Points 1982-1983 81

TABLES (cont'd)

26 Classification of Primary Elevators by Company, Size, Nature of Competition August 1, 1983 and 1975 83

27 Elevator Costs Per Bushel of Grain Handled for Elevators of Different Capacities 86

28 Total and Average Primary Elevator Receipts of Six Major Grains and Turnover Ratios 1976-1982 88

29 Primary Elevator Tariff Rates, 1983-1984 90

30 Rail Mileage and Hall Recommendations by Province 93

31 Primary Elevator Construction Costs 97

32 Saskatchewan Wheat Pool, Comparison of Tariffs, Expenses and Operating Statistics 98

33 Net Earnings for Country Operations 1975-1982 99

EXECUTIVE SUMMARY

Period of Rapid Expansion 1900-1933

The primary elevator system has developed as an integral part of the grain handling and transportation system in western Canada. The first elevator was constructed by the Ogilvie Milling Company at Gretna, Manitoba, in 1881. Following railway construction in the late nineteenth century, the number of elevators on the prairies increased dramatically. With the abolition of flat warehouses and assistance from the railways, the elevator system grew from about 400 in 1900 to 5757 in 1933 when the system reached its maximum number.

Period of Consolidation 1933-1960

After 1933, the number of elevators slowly declined. In the twenty-five year period between 1935 and 1960 the number of elevators in western Canada declined by a modest 7.5 percent. This reduction coincided with an increase in both total and average elevator storage capacity.

Even during this period, 1935-1960, the distribution of primary elevators provincially reflected the relative importance of grain acreage and production, especially export grains, in the provincial economies. Most of the elevators were located in Saskatchewan followed by Alberta/BC and Manitoba. Saskatchewan

also recorded the highest total storage capacity but the lowest average capacity per elevator.

The pace of change in the 1935-1960 time frame reflected institutional and technological advancements in the grain handling and transportation system. The elevator system in western Canada was essentially storage-oriented. Its rationalization was slow largely because of the policies and actions of the federal government, the Canadian Wheat board (CWB), and the railways. In 1956, the federal government passed the Temporary Wheat Reserves Act (TWRA) to provide relief for grain companies strapped with burgeoning stocks and inadequate storage space. The TWRA had the unfortunate effect of promoting storage, although this was not the government's intention. Coupled with this development was the policy of the Canadian Wheat Board (CWB) to accept producer deliveries of grain in the absence of sales outlets and a lack of co-ordination in the grain transportation system. Technical advancements in storage capability reinforced the system's storage orientation.

By the early 1960's the economics of primary elevator operation coupled with significant institutional change inhibited the use of storage as a practical policy. The climate of change which swept through the industry encouraged elevator companies to rationalize their operation and seek more cost-effective means of operation. This changed attitude meant that the direction of the grain handling system gradually shifted from a storage to a

throughput orientation. Vivid signs of the new orientation were exhibited by the relatively rapid reduction in the number of elevators, delivery points, operating units and elevator companies and the continuous increase in average elevator storage capacity.

Period of Increased Consolidation 1961-1975

In the fifteen year period between 1961 and 1975 the number of primary elevators declined by over 20 percent compared to just over 7 percent for the longer 1935-1960 period. As well, the number of delivery points fell by over 24 percent and the number of operating units by over 30 perent. The number of elevator companies decreased substantially, falling from 15 in 1961 to 9 in 1975. The consolidation of the primary elevator system coincided with a continuing increase in average elevator storage capacity. Total elevator storage capacity also increased steadily, although that trend was distorted in 1964, 1971, 1972 and 1975. Another clear signal that the system had become responsive to change was demonstrated by the upward movement in system-wide turnover ratios. In 1960, elevator companies were experiencing just over 1 turn on average but by 1975 the system was averaging over 2 turns.

On a provincial basis, the distribution of primary elevators in western Canada remained almost the same. However, the number of elevators declined faster in Manitoba than Saskatchewan and Alberta/BC. Average elevator storage capacity increased in all three provinces.

The rapid consolidation of the primary elevator system between 1961 and 1975 did not substantially diminish the level of competition at grain delivery points, although the number of companies serving low volume delivery points decreased significantly. This implied that there were more two company points instead of three or four companies serving such points.

Much of the consolidation which occurred during the 1961-1975 period can be attributed to two significant factors - the centralized purchasing practice of some foreign states, e.g. the Soviet Union, which compelled Canada to adapt to the new atmosphere of long-term contractual obligation and the escalating costs of primary elevator operation. Centralized buying by foreign states implied that the CWB had responsibility to ensure that certain grades and types of grain could be brought forward at certain times. As a result handling performance took precedence over the storage orientation which had previously pervaded the system.

With increased emphasis on throughput, the CWB was instrumental in implementing the Block Shipping System and the new Quota System. The Block Shipping System was introduced in 1969-70 and it provided a means of allocating rail cars geographically, among types of grain and among companies according to "blocks". Block shipping allowed the railways flexibility to serve each grain block on a weekly basis and facilitated the matching of the content of cars to outbound shipments. Co-ordination in the grain

handling system was further enhanced by the new Quota System which was oriented to bring into primary elevators at the required time, the types, grades and quantities of grain needed to meet market demand. In other words, incentives for rationalization of the grain handling system were introduced and companies responded by utilizing such techniques as saw-offs, mergers, unilateral closures and operational changes. Although progress was made in making the system more responsive and efficient some impediments to further rationalization still remained e.g. the tariff structure.

Period of Rapid Consolidation 1976-1983

After 1975, the pace of elevator consolidation in western Canada was much more intense. Between 1976 and 1983, the total number of primary elevators in western Canada declined by almost 30 percent. Similar trends were reflected in the rate of decline in the number of delivery points and operating units.

Since 1933, when the grain handling and transportation system achieved its maximum point, the number of primary elevators, delivery points and operating units has decreased by over 50 percent. Within this fifty-two year time frame, average elevator capacity has increased by over 240 percent, average capacity per operating unit by almost 83 percent and total elevator capacity by about 67 percent. Total elevator capacity has, however, been declining since 1975.

In more recent times, 1976-83, the upward trend in storage capacity per elevator, delivery point and operating unit combined with the continuous reduction in the number of elevators reflect the phasing out of many small elevators, the expansion and upgrading of existing elevators and the construction of higher throughput elevators to improve operating efficiency and profitability. Notable innovations in elevator design and construction include the composite or double-composite and the Buffalo Sloped Bin elevators.

With larger and more modern higher throughput elevators, companies have been able to improve their turnover ratios appreciably. In the late 1950s and early 1960s when the grain handling system was basically storage oriented, turnover ratios averaged about one. Currently, companies are averaging, on a systemwide basis, over four turns. Some farm groups still complain about the inefficiency in the system partially caused by a uniform tariff structure and some studies have suggested that variable tariffs could be the answer to further improvements in efficiency.

Since 1975 there has been no major reduction in the number of grain elevator companies i.e. companies with at least five elevators. Only one major company went out of business. Presently, eight major companies dominate the grain handling system. Four of these companies are privately owned while the others are producer-owned. Producer-owned companies, e.g.

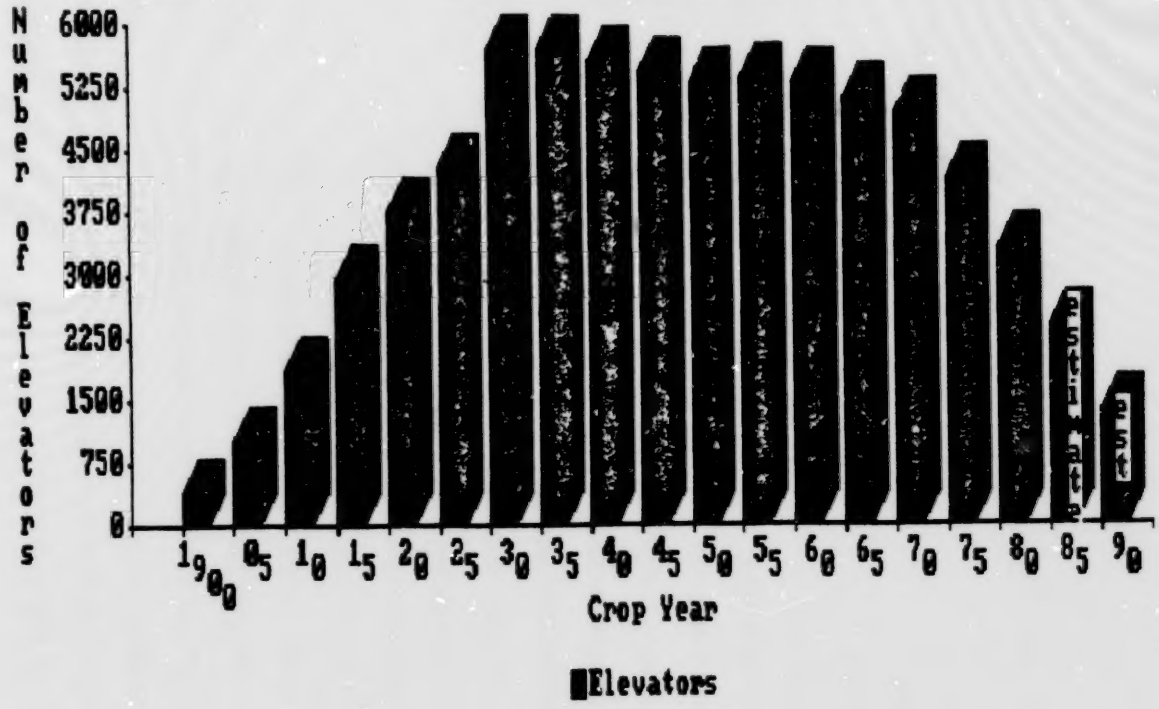
Saskatchewan Wheat Pool, have generally been closing elevators at a faster rate than privately run companies, probably, because of a greater need to do so.

Despite the even more rapid reduction in the number of primary elevators between 1976 and 1983, the level of competition at grain delivery points has remained stable. However, large volume grain delivery points are increasing, though the system is still dominated by delivery points which have relatively small receipts e.g. 66 percent of all grain delivery points have receipts of less than 30,000 tonnes.

Future Development of the Elevator System

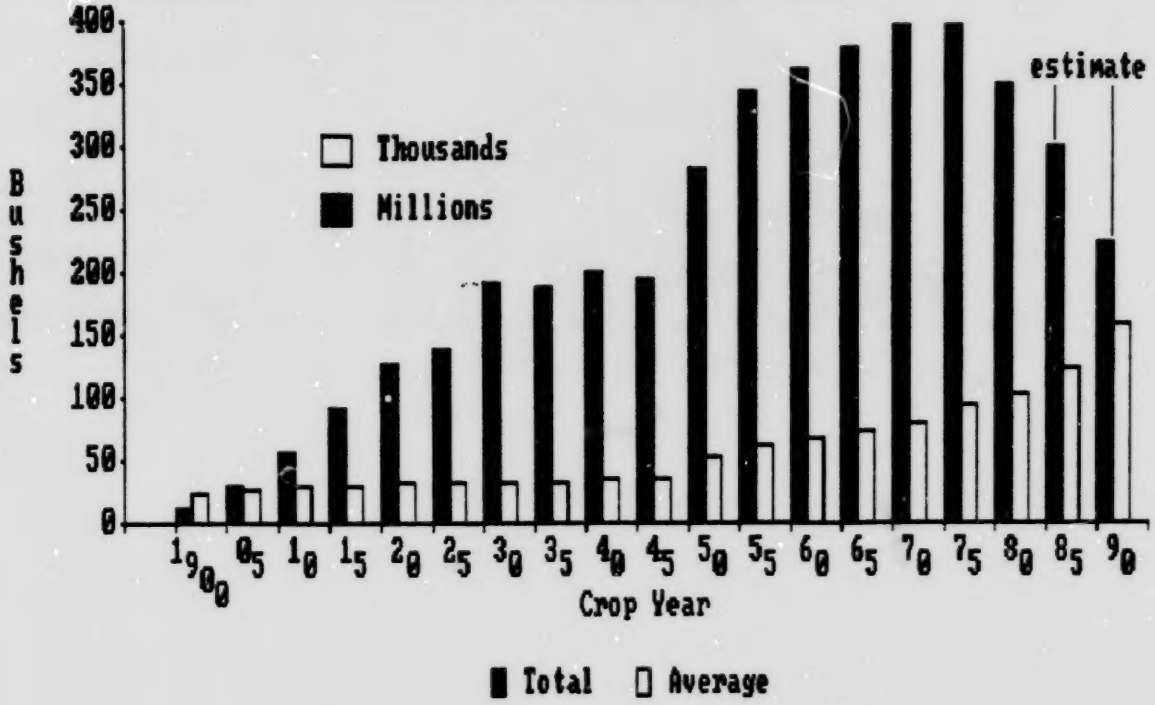
Current trends indicate that the grain handling system is likely to contract still further at least as fast as in the 1976-83 period. By 1990, it is anticipated that the number of primary elevators, delivery points and operating units could be reduced by almost 50 perent. This rate of decline would seem even more probable if specific policies aimed at improving the system are introduced e.g. variable elevator tariffs and some form of producer payment following the review of the new Western Grain Transportation Act (WGTA).

CHART I NUMBER OF ELEVATORS 1900-1990



While the primary elevator system is expected to contract significantly, it is anticipated that receipts, turnover ratios, average capacity per elevator, delivery point and operating unit will all increase substantially by 1990. On the other hand, total elevator capacity is expected to continue on its downward path, with the fastest rate of reduction occurring in Saskatchewan.

CHART II TOTAL AND AVERAGE CAPACITY 1900-1990



RESUME A L'INTENTION DE LA DIRECTION

Période d'expansion rapide 1900-1933

Dans l'ouest du Canada, l'évolution du réseau de silos-élévateurs primaires a suivi celle du système de transport et de manutention des céréales. Le premier silo-élévateur a été construit par la Ogilvie Milling Company de Gretna (Manitoba) en 1881. A la suite de la construction du réseau ferroviaire à la fin du 19e siècle, le nombre de silos-élévateurs dans les Prairies s'est accru sensiblement. Ainsi, grâce à l'abolition des entrepôts à niveau et à la mise en place du réseau ferroviaire, il est passé d'environ 400 en 1900 à 5 757 en 1933, soit le nombre le plus élevé jamais atteint.

Période d'unification 1933-1960

Après 1933, le nombre de silos-élévateurs a commencé à diminuer lentement, affichant une baisse de 7,5 pour cent de 1935 à 1960. Cette réduction a toutefois été accompagnée d'une augmentation de la capacité de stockage totale et moyenne des silos-élévateurs.

Même durant cette période, la distribution des silos-élévateurs primaires entre les diverses provinces reflétait bien l'importance relative accordée à la superficie et à la production de céréales, en particulier celles destinées à l'exportation, dans l'économie des diverses provinces. On a ainsi

constaté que la plupart des silos-élévateurs se trouvaient en Saskatchewan; venaient ensuite l'Alberta/Colombie-Britannique et le Manitoba. C'est également en Saskatchewan que l'on a enregistré la capacité totale maximale, bien que la capacité moyenne par silo-élévateur ait été la plus faible.

Les changements qui se sont produits entre 1935 et 1960 reflètent bien l'évolution du système de transport et de manutention des céréales, sur le plan technique et socio-économique. Les silos-élévateurs dans l'ouest du Canada servaient essentiellement au stockage. La rationalisation du réseau a été lente, en raison surtout des politiques et des mesures adoptées par le gourvernement fédéral, la Commission canadienne du blé et les sociétés ferroviaires. En 1956, le gouvernement fédéral a adopté la Loi sur les réserves provisoires de blé, afin de venir en aide aux entreprises de stockage de grain qui possédaient des stocks très abondants et trop peu d'espace d'entreposage. Cette loi a malheureusement eu l'effet de promouvoir l'entreposage, bien que cela n'ait pas été l'intention du Gouvernement. A cela sont venues s'ajouter la politique de la Commission canadienne du blé, en vertu de laquelle les livraisons de céréales des producteurs étaient acceptées malgré l'absence de débouchés pour ces produits, ainsi qu'un manque de coordination à l'intérieur du système de transport des céréales. Enfin, les progrès technologiques réalisés en ce qui a trait à la capacité de stockage sont venus renforcer l'importance accordée à l'entreposage.

Au début des années 1960, la situation économique des entreprises de stockage de grains et les changements socio-économiques importants qui se sont produits ont entraîné un revirement de la situation. Le climat de changement qui a balayé le secteur a incité les exploitants de silos-élévateurs à rationaliser leur entreprise et à trouver des moyens d'exploitation plus rentables. A la suite de ce changement d'attitude, la capacité de traitement est devenu l'aspect prioritaire du système de manutention des céréales, alors qu'auparavant c'était l'entreposage. La réduction relativement rapide du nombre de silos-élévateurs, de points de livraison, d'unités de production et d'exploitants de silos-élévateurs, ainsi que l'augmentation continue de la capacité moyenne de stockage des silos-élévateurs, sont tous des facteurs qui illustrent bien cette nouvelle orientation.

Période d'unification accrue 1961-1975

De 1961 à 1975, le nombre de silos-élévateurs primaires a diminué de plus de 20 pour cent, alors que la baisse n'avait été que d'un peu plus de 7 pour cent entre 1935 et 1960. Par ailleurs, le nombre de points de livraison a chuté de plus de 24 pour cent, et la baisse au chapitre du nombre des unités de production a été de plus de 30 pour cent. Enfin, le nombre de sociétés de stockage de grains a baissé sensiblement, passant de 15 en 1961 à 9 en 1975. L'unification du réseau de silos-élévateurs primaires a coïncidé avec l'accroissement continu de la capacité moyenne de stockage d'un silo-élévateur. La

capacité totale de stockage a elle aussi augmenté à un rythme soutenu, bien que cette tendance ait été renversée en 1964, 1971, 1972 et 1975. L'accroissement du taux de renouvellement des stocks dans l'ensemble du réseau est un autre facteur qui indique bien que celui-ci s'est adapté aux changements qui se sont produits. Ainsi, en 1960, ce taux de renouvellement dépassait à peine un en moyenne, alors qu'il était de plus de deux en 1975.

A l'échelle provinciale, la distribution des silos-élévateurs primaires dans les provinces de l'Ouest est demeurée passablement inchangée. Cependant, le nombre de silos-élévateurs a diminué plus rapidement au Manitoba qu'en Saskatchewan, en Alberta et en Colombie-Britannique. En revanche, la capacité moyenne de stockage s'est accrue dans ces provinces.

L'unification rapide du réseau de silos-élévateurs primaires de 1961 à 1975 n'a pas toutefois réduit sensiblement la concurrence entre les divers points de livraison des céréales, bien que le nombre d'entreprises acheminant leurs produits vers les points de livraison à faible débit ait diminué sensiblement. Ainsi, plutôt que d'avoir trois ou quatre entreprises acheminant leurs produits vers de tels endroits, il n'y en avait plus que deux.

L'unification qui s'est produite entre 1961 et 1975 est attribuable en grande partie à deux facteurs importants, à savoir la pratique de groupement des achats adoptée par certains pays

étrangers comme l'Union Soviétique, laquelle a forcé le Canada à s'adapter à la nouvelle tendance des obligations contractuelles à long terme, ainsi que la hausse des coûts d'exploitation des silos-élévateurs primaires. En vertu de cette politique de groupement des achats adoptée par les pays étrangers, la Commission canadienne du blé avail la responsabilité de veiller à ce que certains types et catégories de céréales puissent être obtenus à des moments précis. C'est alors que le rendement de la manutention a eu la préséance sur le stockage, auquel on accordait auparavant la priorité.

Vu l'importance accrue accordée à la capacité de traitement, la Commission canadienne du blé a mis en oeuvre un système de zonage du transport et un nouveau système de contingentement. Le système de zonage du transport, qui a été introduit en 1969-1970, établissait une nouvelle méthode permettant de répartir les wagons ferroviaires géographiquement entre les diverses entreprises, suivant les types de céréales et les "zones" établies. Ce système offrait aux sociétés ferroviaires une certaine flexibilité leur permettant de servir chaque zone sur une base hebdomadaire et permettait également de mieux assortir le contenu des wagons suivant leur destination. La mise en place d'un nouveau système de contingentement, qui avait pour but de stocker dans les silos-élévateurs primaires, et ce aux moments requis, les types, catégories et quantités de céréales nécessaires pour satisfaire à la demande du marché, a favorisé la coordination du système de manutention des céréales. En d'autres

mots, des facteurs visant à stimuler la rationalisation du système de manutention des céréales avaient été introduits et les entreprises y ont réagi en adoptant certaines mesures telles que des coupures, le fusionnement des entreprises, les fermetures unilatérales et les changements au niveau des modes d'exploitation. Bien que le système ait été rendu plus efficace, certains obstacles à la poursuite de la rationalisation demeuraient, par exemple la tarification.

Période d'unification rapide 1976-1983

Après 1975, l'unification du système dans l'ouest du Canada s'est intensifiée. Ainsi, de 1976 à 1983, le nombre total de silos-élévateurs primaires a diminué de près de 30 pour cent, et des tendances analogues ont été observées, en ce qui a trait au nombre de points de livraison et d'unités de production.

Depuis 1933 (année où le nombre de silos-élévateur a atteint un sommet), le nombre de silos-élévateurs primaires, de points de livraison et d'unités de production a diminué de plus de 50 pour cent. Au cours de ces 52 années, la capacité moyenne de stockage des élévateurs s'est toutefois accrue de plus de 240 pour cent, la capacité moyenne par unité de production de près de 83 pour cent et la capacité totale d'environ 67 pourcent. La capacité totale affiche toutefois une baisse depuis 1975.

Au cours des quelques dernières années, soit de 1976 à 1983, l'accroissement de la capacité de stockage par silo-élévateur, point de livraison et unité de production et la réduction continue du nombre de silos-élévateurs se sont traduits par la suppression graduelle de bon nombre de petits silos-élévateurs, l'agrandissement et l'amélioration des silos-élévateurs existants et la construction de silos-élévateurs à rendement plus élevé, tout cela dans le but d'accroître l'efficacité et la rentabilité des entreprises. Parmi les changements importants dans la conception et la construction des silos-élévateurs, mentionnons la construction des silos-élévateurs à une ou deux portes et des silos-élévateurs Buffalo à cellule inclinée.

Grâce à la construction de silos-élévateurs plus gros, plus modernes et à rendement plus élevé, les entreprises ont pu accroître sensiblement leur taux de renouvellement des stocks. A la fin des années 1950 et au début des années 1960, période durant laquelle le système de manutention des céréales était axé principalement sur le stockage, le taux moyen de renouvellement ne se situait qu'à un. A l'heure actuelle, il dépasse en moyenne quatre. Cependant, certains groupements agricoles se plaignent encore de l'inefficacité du système, en partie à cause de la tarification uniforme, et certaines études laissent suggérer que l'établissement de tarifs variables pourrait permettre d'accroître encore davantage son efficacité.

Depuis 1975, il n'a eu aucune réduction importante du nombre d'entreprises de stockage de céréales, c'est-à-dire d'entreprises possédant au moins cinq silos-élévateurs. Seulement une entreprise importante a cessé ses activités. A l'heure actuelle, huit entreprises dominent le secteur de la manutention des céréales. Quatre d'entre elles appartiennent à des particuliers, alors que les autres sont la propriété de groupements de producteurs. Ces dernières, par exemple la Saskatchewan Wheat Pool, ont pour la plupart fermé des silos-élévateurs à un rythme plus rapide que les entreprises privées, et cela peut-être à cause d'un besoin plus grand de le faire.

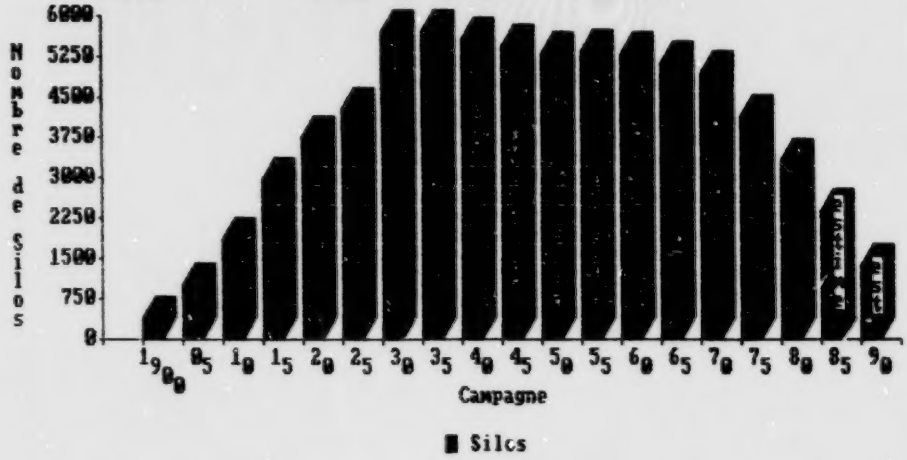
Malgré la réduction encore plus rapide du nombre de silos-élévateurs primaires entre 1976 et 1983, la concurrence entre les divers points de livraison s'est maintenue. Bien que le nombre de points de livraison à débit élevé ait augmenté, le nombre de lieux de livraison où les arrivages sont relativement faibles demeure élevé; ainsi, 66 pour cent de tous les lieux de livraison reçoivent moins de 30 000 tonnes de céréales.

Perspectives

Selon les tendances actuelles, il semble que la compression du système de manutention des céréales se poursuivra, à un rythme aussi rapide que durant la période de 1976 à 1983. On s'attend ainsi à ce qu'en 1990 le nombre de silos-élévateurs primaires, de lieux de livraison et d'unités de production diminue

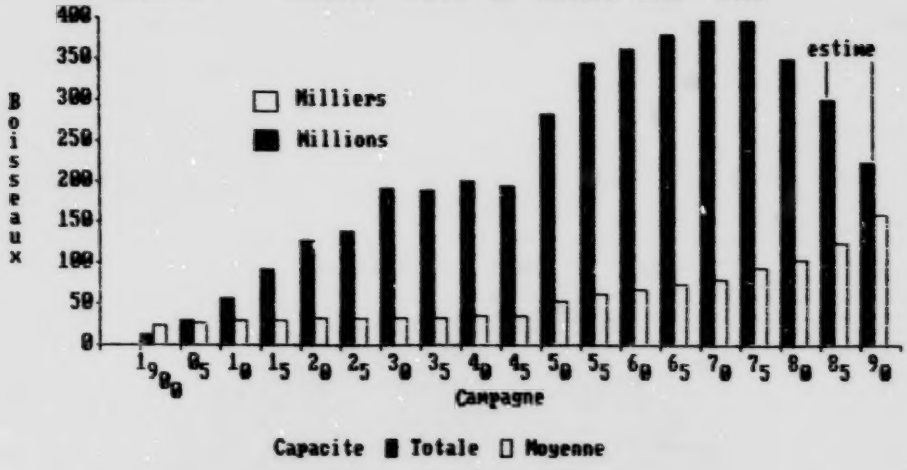
d'environ 50 pour cent. Les possibilités que cette baisse se réalise seront d'autant plus fortes si des politiques précises visant à améliorer le système sont mises en vigueur; à titre d'exemple, mentionnaons d'établissement de tarifs variables et le versement de paiements aux producteurs à la suite de l'examen de la nouvelle Loi sur le transport du grain de l'Ouest.

FIGURE I NOMBRE DE SILOS 1980-1990



Même si l'on prévoit une réduction sensible du nombre de silos-élévateurs primaires, on s'attend à ce que les rentrées, le taux de renouvellement, ainsi que la capacité moyenne par élévateur, lieu de livrison et unité de production augmentent sensiblement d'ici à 1990. En revanche, la capacité totale des silos-élévateurs devrait continuer à diminuer, la réduction la plus marquée se produisant en Saskatchewan.

FIGURE II CAPACITE TOTALE ET MOYENNE 1980 - 1990



CHAPTER 1

Introduction

This study has been done to provide background information on a major element of the Prairie grain handling and transportation system - the elevator component - to the Committee of Inquiry on Crow Benefit Payment. The Committee, established under the Western Grain Transportation Act (WGTA), is required to report to the Minister of Transport by March 31, 1985. The study is one of a number of contributions Agriculture Canada is making to the work of the Committee.

The study was also prepared with the review of the WGTA in mind. This review is to be undertaken in 1985-86.

While a good many studies have been done on the grain handling and transportation system in Western Canada, very few, if any, have looked at the evolution of the primary elevator system. This study is an attempt to fill that void and present in one place the most important elements which have influenced the development of a major part of the distribution of Prairie grain from the farm gate to export position.

The study presents an historical overview of the primary elevator system in western Canada. While some reference is made to other components of the grain handling and transport system, particularly the railways and Canadian Wheat Board, it does not

present an indepth analysis and evaluation of these institutions. Rather, the focus is primarily on the role of these institutions in terms of their effect on primary elevator system development.

The purpose of this study is to discuss the historical development of the primary elevator system in western Canada and assess the pattern of rationalization by identifying and evaluating the major trends in the process. The study is divided into four parts. Chapter two discusses the early evolution of the grain handling and transport system in western Canada and the functions of primary elevators and companies. It covers the period 1900 to 1935. In this period, the grain handling and transport system was firmly established with the railway and elevator networks expanding to their maximum point. With the system in place, rationalization of the grain handling system began.

Chapter three analyzes and assesses the changes in system configuration between 1935 and 1960. This time frame is isolated for assessment because it marked the period when the grain handling system was basically storage oriented. The chapter looks at a number of the developments which facilitated this storage orientation and the pace of rationalization which materialized.

From about 1963 onwards, there was a shift in the grain handling system from a storage to a throughput orientation. Chapter four examines this change. It covers the period 1961 to 1975. The

rationalization process is described and assessed and some of the major forces which gave impetus to system changes are highlighted.

Chapter five is more or less, an extension of chapter four in the sense that the trends which have been identified for the 1961-1975 period have also continued to influence system configuration in the 1976-1983 time frame. Chapter five presents an evaluation of elevator rationalization in the last eight years. It examines patterns of ownership, assesses the impact of rationalization on the competitive nature of the system and analyses handling performance for the 1976-83 period. The final chapter looks at some of the major forces which have had an impact on the system and examines some of the policy issues which might influence the system in future years. It concludes with some projections on trends in elevator numbers and characteristics.

CHAPTER 2

Origin of the Grain Handling System in Western Canada and Current Functions of Primary Elevators and Elevator Companies

Primary elevators play an important role in the grain handling and transport system in Western Canada. The Canada Grain Act(1) defines a primary elevator as an elevator the principal use of which is the receiving of grain directly from producers for either or both storage and forwarding. Primary elevators were earlier known as country elevators because of their location in rural areas and the fact that grain was elevated to the top of the structure and then allowed to flow by gravity down into storage bins. It was not until 1971 that the name was changed to primary elevator under provisions of the Canada Grain Act(2).

Most primary elevators owned by primary elevator companies are located at convenient delivery points on railway lines which have been built throughout grain growing areas. The elevators, so located, are able to provide grain producers with immediate cash markets or storage for their produce in close proximity to their farms. The average distance from farm to primary elevator is about twelve miles. Rail cars are allocated to primary elevators through the Block Shipping System* by elevator company head offices(3). The number of cars allocated depends on competitive conditions and the number of carlot quantities in store of the

* The Block Shipping System is discussed in greater detail in Chapter 4.

kind and grade of grain in demand at processing plants and export ports. The elevator's "spotting" capacity, i.e. its ability to receive a given number of rail cars at any one time, limits the number of cars that can be allocated to a particular point on a train run.

This chapter traces the origin of the railway and primary elevator system in western Canada and describes the functions of primary elevators and companies. Railway development preceded the construction of primary elevators and, hence, its importance to the early evolution of the primary elevator system cannot be underestimated. It was the railways which influenced the form and nature of the grain collection system on the prairies.

2.1 Current Functions of Primary Elevators and Elevator Companies

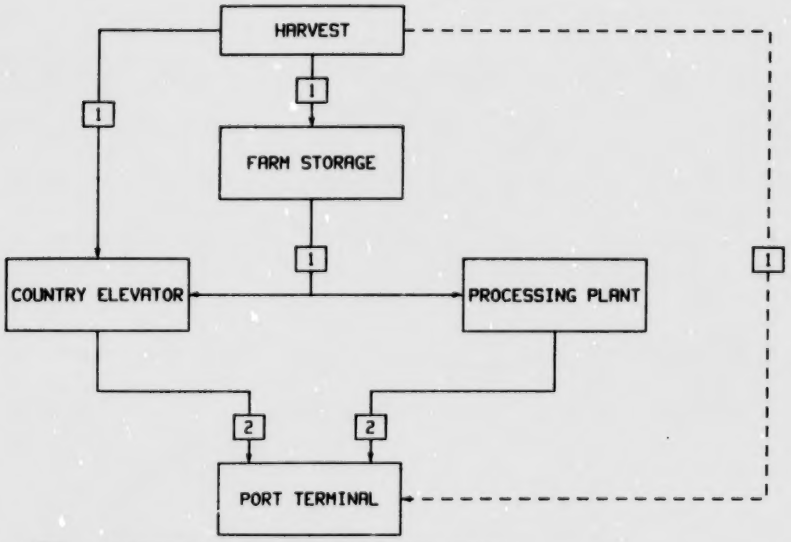
Primary elevators perform several functions the most important of which are, perhaps, the purchase and storage of grain. Beyond these two basic functions, elevator companies have expanded their activities into other areas, such as, terminal facilities, merchandizing grain on both the domestic and export market, grain processing and sale of farm supplies and equipment.

The prime function of a primary elevator company is to purchase grain from producers. Elevators have storage space and machinery required for the weighing, elevation, storage and outward loading into railway cars of grain delivered by

the truckload from farms. These facilities make it possible for the elevator manager to buy and sell grain, to accept and make delivery, and thereby to exercise the primary function of marketing at an identifiable marketplace(4).

A secondary marketing function performed by primary elevators is the storage of prairie grain. Under the Canada Grain Act, the elevator manager must accept a producer's load of grain for storage provided the grain is in sound warehousing condition and is lawfully delivered and provided there is available space in the elevator(5).

THE PRAIRIE GRAIN HANDLING AND TRANSPORT SYSTEM



From experience, primary elevator companies have found that the operation of elevators by itself does not produce an

adequate degree of financial stability. As a result, the major companies have endeavored to widen their risk base by extending their operations into other grain marketing activities. Indeed, some of these elevator companies rank in the top one hundred corporations in Canada as a whole in terms of sales. For example, in July 1983, the Saskatchewan Wheat Pool was ranked 36th among major public and private companies(6).

The operation of terminal facilities is an integral part of the activities performed by elevator companies. This activity was originally undertaken by the railways and later by the federal government. Primary elevator companies have long since taken over the terminal elevator business at Thunder Bay and Vancouver. The federal government now owns and operates no port terminal elevators or interior terminals in Western Canada. It is of obvious advantage to the primary elevator companies to consign the grain they purchase in the country to their own terminal, and to extend their earnings base through terminal elevation and handling revenue sources. However, not all non-board grains are consigned to specific terminals eg. canola.

Another area of expansion for these companies has been to join the ranks of domestic and export merchants. The primary elevator companies' capacity in merchandising grain at a more advanced stage is enhanced by the ownership or possession of grain in their primary and terminal facilities. Wheat, oats

and barley grown in western Canada and sold for export or for human consumption in Canada must be marketed through the Canadian Wheat Board (CWB). However, primary elevator companies have agency status for the export of these grains. As well, companies can sell non-Board and off-Board grains without prior approval of the CWB.

Grain processing has also become an important activity. Several companies now own and operate flour mills, feed manufacturing plants and/or oilseed crushing plants. In this way they have taken an additional step in the marketing sequence toward the point of consumption in their endeavour to expand their earnings base. Some primary elevator companies have also embarked upon livestock marketing while others have entered the printing and publishing field(7).

Finally, primary elevators serve as sales outlets to producers for fertilizers, chemicals, feed, seed and other farm supplies. Not only is it a matter of convenience but also of transportation economy to some producers to have these supplies available for the return trip as they deliver grain from their farms. Farm supplies sales sometimes make the difference between a profitable and unprofitable elevator operation. For example, United Grain Growers Ltd. has estimated potential farm supply sales of at least $600,000 in order to construct a 3500 tonne elevator.

The functions that primary elevators perform suggest they must operate in harmony with other components of the grain handling and transport system. In fact, any evaluation and discussion of the evolution of the primary elevator system would be incomplete without reference to such institutions as the Canadian Wheat Board (CWB), the Railways and other facets of the system, such as terminal elevators, which facilitate the marketing of prairie grain. To a large extent, the evolution of the primary elevator system parallels the development of these institutions. This is especially so with respect to the Canadian Wheat Board and the Railways.

2.2 Railway Development*

The first railway on the Prairies was completed in 1879. It linked Winnipeg to St-Paul, Minnesota and gave Western Canada's grains access to world markets via the U.S. rail system. The construction of the Canadian Pacific Railway effectively launched western Canada as a major grain production area. In 1882, it joined Winnipeg to Fort William and Port Arthur (now Thunder Bay) on Lake Superior to give prairie grain a Canadian rail link to world markets via the great lakes water route system. By 1885, it had pushed west through the mountains to Vancouver to create a new route to

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* The discussion of railway development is drawn largely from the Hall Commission Report on Grain and Rail in Western Canada, Vol. I, 1977 and Canadian International Grains Institute publication on Grains and Oilseeds: Handling, Marketing, Processing. 3rd edition, 1982, pp. 105-107.

world markets via the Pacific Coast. As well, there was a rail link to eastern Canada via the line built north of Lake Superior by the CPR around 1885.

This all-Canadian transportation link to world markets revolutionized the political and economic society of the prairies. As part of its grant from the federal government, CP Rail was given extensive land rights across the prairies, most of which were given up or sold off in later years. The company aggressively developed these vast land holdings by encouraging people to settle on land adjacent to the right-of-way.

The Canadian government also launched a major campaign throughout the world to attract immigrants to Canada to develop idle prairie lands. These settlers needed rail transportation to take their grain to world markets and to bring grain production machinery and equipment from eastern Canada. New railway companies were formed and soon rails crisscrossed the potential grain production area.

The birth of Canada's second major railway, Canadian Northern, now Canadian National, took place in 1896. By 1900, it had grown to reach from Winnipeg to Thunder Bay, by 1905 through to Edmonton and, by 1915, through the Rockies to Vancouver.

During this period of rapid railway construction, the federal government signed a contract with another railway company, Grand Trunk Pacific, to build a transcontinental railway from Moncton, New Brunswick, to Winnipeg. In return for government support, Grand Trunk Pacific agreed to use its own finances to build a line from Winnipeg via Edmonton and the Yellowhead Pass to Prince Rupert. Because Prince Rupert is 410 miles closer to Asia than Vancouver, many people predicted this Northern British Columbia port would become Canada's major west coast port(8). By 1910, the Grand Trunk Pacific stretched from Thunder Bay to Edmonton; by 1913, it had reached Prince Rupert.

During this period of expansion, the network of railways grew from 5,966 miles in 1906 to 12,999 miles by 1915 at which time three transcontinental railways stretched across Canada. Soon after they reached the Pacific Coast, however, both the Canadian Northern and Grand Trunk Pacific experienced financial difficulties which forced the federal government to step in. The Canadian Northern became bankrupt in 1916 and, in 1918, the federal government took it over. The government merged both companies to form the Canadian National Railway in 1920.

TABLE 1

RAIL MILES OF TRACK 1906-1935

YEAR	MANITOBA	SASKATCHEWAN	ALBERTA	TOTAL
1906	2774	1957	1235	5,966
1910	3221	2932	1488	7,641
1915	4498	5327	3174	12,999
1920	4404	6220	4474	15,098
1925	7539	7056	4965	16,560
1930	4410	8175	5607	18,192
1935	4970	8555	5760	19,285

Source: Hall Commission Report, Vol. I, 1977, p. 30.

Today, two major railways operate in Canada: Canadian National and CP Rail. However, two other railways - Great Slave Railway and British Columbia Railway - are involved in Canada's grain movement. They were built in recent years to develop Northern Alberta and British Columbia. The total rail network which facilitates the movement of grain from primary elevators to export terminals expanded from about 13,000 miles in 1915 to just over 19,000 miles in 1935, the year when, it is generally agreed, railway construction in western Canada was virtually completed.

2.3 Evolution of the Primary Elevator System

Railway construction in 1879 was followed by the development of buildings designed to receive, store and load grain grown by producers into rail cars. These facilities were flat warehouses. They were of wood construction, usually on stilts, built to a height of a wagon box or rail car for easy loading.

Producers delivered their grain in bags. The warehouse operator used small scales to weigh the grain and producers were paid accordingly. The grain was stored in bags to await shipment to domestic processing plants or export ports. When shipped, it was removed from the bags and loaded into rail cars in bulk(9). By 1890,there were 103 of these warehouses across the prairies. Beyond 1890, the number of warehouses decreased steadily.

By the turn of the century, grain production was the dominant business in western Canada. In 1901, approximately 3.5 million acres had been planted to major crops. The Winnipeg Grain Exchange had been established in 1887, and in 1903, it opened a futures market. During this period, grain marketing took place largely through the exchange(10).

The flat warehouse system was inconsistent with railway operation and the railways offered inducements to switch the grain handling system from bags to bulk. They offered free sites and special privileges to companies to build primary elevators beside their tracks. These elevators were capable of receiving, storing and shipping grain in bulk lots.

With these incentives, the pace of elevator construction quickened. There was one elevator in 1879, 90 by 1890, 421 by 1900 and 1866 by 1910. Meanwhile flat warehouses decreased from 97 in 1900 to 19 in 1915. By 1920, flat warehouses were

forced out of the market altogether. However, the elimination of flat warehouses did not materialize without controversy.

TABLE 2

PRIMARY ELEVATORS AND FLAT WAREHOUSES IN WESTERN CANADA 1900-1935

YEAR	ELEVATORS NO.	WAREHOUSES NO.	STORAGE CAPACITY (Million bushels)	AVERAGE CAPACITY ('000 bushels)
1900	421	97	12.8	24.7
1905	1049	50	31.3	28.5
1910	1866	32	57.5	30.3
1915	2995	19	94.3	31.3
1920	3785	-	127.2	33.6
1925	4293	-	141.3	32.9
1930	5733	-	193.3	33.7
1933	5757	-	192.8	33.5
1935	5728	-	189.9	33.2

Source: Canadian Grain Commission, Grain Elevators in Canada.

During the early 1900's, when the Grand Trunk Railway and the Canadian Northern Railway opened up new territory throughout the West, the growth of elevators and elevator handling companies continued at an exceptionally fast rate. By 1920, there were 166 primary elevator companies operating in Western Canada, and by 1933, the grain handling system reached its peak with 5757 primary elevators having a storage capacity of over 189 million bushels. Beyond 1933 the number of elevators declined, but at a fairly slow rate, in part because as technology changed (i.e. as trucks and roads improved), the system in place became sub-optimal. It had implications for optimal elevator configuration and this became a factor in the consolidation process.

To put this development in its proper perspective one has to understand the forces at play at that point in time. The incentive for efficiency in grain handling lay primarily with the railway companies, to reduce loading time and make the most effective use of their limited boxcar supply. In order to achieve this objective, railway companies viewed elevators as a superior facility to achieve expeditious turn-around of cars and, hence, they agreed to supply cars only to elevators and not flat warehouses(11). Warehousemen and producers protested the railways' action. Warehousemen felt that local elevators had secured a monopoly position by the aid of the railways and the railways were discriminating against them. Producers were annoyed with the railways for forcing them to ship their grain through, or sell to, primary elevators.

This issue along with some others forced the federal government to intervene. The government appointed a Royal Commission in 1899 to enquire into the complaints. The recommendations led to the passage of the Manitoba Grain Act in 1900(12). The Act made provision for regulation of the grain trade and it included a clause prohibiting the railways from refusing to provide service to flat warehouses. The Manitoba Grain Act was amended in 1902 to include requirement of a car order book which implied that producers wishing to ship grain had to place an order for cars and cars had to be distributed in order of application. Canadian Pacific breached this law and the company was charged, convicted, and

on appeal before the Supreme Court of Canada lost its case. The result was the producer car concept which exists even today.

It is interesting to note that primary elevators, at that point in time, were operated by persons and companies engaged in grain merchandizing. In fact, the 1899 Royal Commission legitimized this practice by stating that elevator operators could only make a profit if they were also engaged in grain merchandising(13). Hence, the important feature of the early development of the grain handling system was the close relationship between grain handling and grain merchandising.

The first to engage in construction of elevators were the flour mills with the Ogilvie Milling Company constructing the first elevator in Canada at Gretna, Manitoba, in 1881. However, the Northern Elevator Company was the first of the so-called "line" elevator companies to construct a chain of elevators to act as their own source of supply for grain merchandising(14).

The concept of producers entering the grain merchandising business to offer competition to the line elevator companies was first given effect by the Grain Growers Grain Company which was formed in 1906. It was the offshoot of the Territorial Grain Growers Association. The Grain Growers Company had no physical facilities but it exerted enough

pressure on the Manitoba government to force it to construct a chain of facilities. The government venture was, however, a failure and most of the elevators were eventually sold to the Grain Growers Grain Company. Having acquired these facilities, the company established itself on an equal footing with the line companies. The Grain Growers Grain Company became the United Grain Growers in 1917(15). Since then the prairie Wheat Pools have emerged, along with United Grain Growers, as the dominant forces in the primary elevator system. Further discussion of these companies is reserved for a later chapter.

CHAPTER 3

Developments in the Primary Elevator System 1935-1960

There is general agreement[16] that the basis of the existing grain handling and transport system was already in place by 1935. As indicated earlier, both the elevator and railway systems had expanded to their maximum point, providing service to the great majority of grain producers in western Canada. With the system in place, the emphasis began to shift from new elevator construction to elevator consolidation. In this chapter, the changes in system configuration between 1935 and 1960 are described, including some of the more important developments which have influenced or brought about these changes. A thesis of this chapter is that elevator companies developed a storage rather than throughput orientation largely because of the income protection policies of the federal government and the strategies of the Canadian Wheat Board.

3.1 Primary Elevator System Configuration: 1935-1960

The period 1935-1960 was characterized by a modest decline in the number of elevator units in western Canada. As indicated in TABLE 3, there were 5728 primary elevators in 1935. However, by 1960 this number had declined to 5299, a reduction of 429 or 7.5 percent. In fact, there were a number of buildings, called annexes, which were used for storing grain but were not classified as licensed elevators. TABLE 3 indicates that there were 52 such buildings in 1940; the

number increased to 170 in 1945 and then dropped off to 33 in 1960.

The number of grain delivery points declined modestly as well, falling from 2113 in 1945 to 2068 in 1960. The fastest decline occurred, however, in the number of companies each owning more than five elevators. From a high of 39 in 1935, elevator company ownership fell to 17 in 1960, a decline of over 50 percent. One reason for the rapid decline in ownership of elevators might have been the technological efficiencies in the form of new scales, bins and automatic equipment which were introduced in the system. Large companies might have been better able to improve the handling capability of their facilities while the small companies found it difficult to make these improvements and, therefore, lost their competitive edge as viable enterprises.

TABLE 3

PRIMARY ELEVATOR CONFIGURATION
1935-1960

YEAR	DELIVERY POINTS (No.)	PRIMARY ELEVATORS (No.)	DECREASE	STORAGE CAPACITY (m.bushels)	AVERAGE CAPACITY (-000 bu)	COMPANIES (No.)
1935	n.a.	5728	...	189.9	33.2	39
1940	n.a.	5600(52)	128	201.3	35.9	32
1945	2113	5463(170)	137	197.1	36.1	29
1950	2139	5309(158)	166	283.0	53.3	23
1955	2083	5367(36)	54	345.2	64.3	19
1960	2068	5299(33)	71	361.8	68.3	17

Source: Canadian Grain Commission, Grain Elevators in Canada.
( ) unlicensed elevators

The reduction in the total number of elevators coincided with an increase both in total and average storage capacity. This phenomenon reflects the storage orientation of the system and improvements in elevator facilities. In 1935, average storage capacity per elevator was just over 33 thousand bushels, but by 1960, it had risen to about 68 thousand bushels, an increase of over 100 percent.

Even during this period, 1935-1960, the distribution of primary elevators provincially reflected the relative importance of grain acreage and production, especially export grains, in the provincial economies. Specifically, most of the elevator units were located in Saskatchewan followed by Alberta/British Columbia and Manitoba.

Within the period under consideration, the number of primary elevators in each province declined, albeit at an uneven and relatively slow rate. TABLES 4, 5, and 6 show that the fastest decline occurred in Saskatchewan where the number of elevators decreased from 3234 in 1935 to 2911 in 1960, a reduction of 323 or 10 percent. This was followed by Alberta/B.C. where the number declined by 56 or 3 percent while the smallest decrease took place in Manitoba which showed a decline of 2 percent. The relatively large decline in the number of elevator units in Saskatchewan can be attributed to the preponderance of small, inefficient and uneconomic units.

TABLE 4

PRIMARY ELEVATORS IN MANITOBA
1935-1960

YEAR (as of Aug. 1)	ELEVATORS (No.)	CAPACITY (million bushels)	AVERAGE CAPACITY (-000 bushels)
1935	715	22.7	31.7
1940	705	24.0	34.0
1945	705	24.4	34.6
1950	711	35.7	50.2
1955	713	45.6	64.0
1960	701	47.9	68.3

TABLE 5

PRIMARY ELEVATORS IN SASKATCHEWAN
1935-1960

YEAR (as of Aug. 1)	ELEVATORS (No.)	CAPACITY (million bushels)	AVERAGE CAPACITY (-000 bushels)
1935	3234	101.3	31.3
1940	3192	102.3	32.0
1945	3167	102.8	32.5
1950	3035	146.0	48.1
1955	2953	179.4	60.8
1960	2911	188.3	64.7

TABLE 6

PRIMARY ELEVATORS IN ALBERTA/B.C.
1935-1960

YEAR (as of Aug. 1)	ELEVATORS (No.)	CAPACITY (million bushels)	AVERAGE CAPACITY (-000 bushels)
1935	1779	65.9	37.0
1940	1775	75.0	42.3
1945	1757	69.3	39.4
1950	1725	101.3	58.7
1955	1747	120.2	68.8
1960	1723	125.3	72.7

Source: Canadian Grain Commission, Grain Elevators in Canada

Total elevator storage capacity grew the fastest in Manitoba where it jumped from a low of 22.7 million bushels in 1935 to 47.9 million bushels in 1960, an increase of over 100 percent. Alberta/B.C. followed Manitoba with total storage capacity increasing from 65.9 million bushels in 1935 to 125.3 million bushels in 1960, an increase of just over 90 percent. Saskatchewan showed an increase of 85.9 percent, but the largest in absolute terms.

TABLES 4 to 6 also show that unit storage capacity per elevator increased dramatically in all western provinces. In Manitoba, average storage capacity jumped from about 32 thousand bushels in 1935 to just over 68 thousand bushels in 1960. In both Saskatchewan and Alberta/B.C. average elevator storage capacity reflected the same trend.

The dramatic increase in total and average elevator storage capacity coupled with the relatively modest decline in elevator units in this period can be linked to the income protection measures pursued by the federal government and the Canadian Wheat Board at that time.

3.2 Evolution of the Canadian Wheat Board and its Marketing Strategy

When the open market for the sale of Canadian grain was suspended in 1917, the federal government established a Board of Grain Supervisors to control the distribution and price of

Canadian Wheat. This move was necessitated by the centralized buying of allied governments which had effectively cornered the market. At the end of World War I, the first Wheat Board was established to market the 1919/20 crop. The Board of Grain Supervisors was disbanded ten days after the formation of the Board.

The evolution of the Canadian Wheat Board (CWB)*, and the strategies which it pursued have had a significant effect on the grain handling system in Western Canada. The emergence of the CWB can be traced to the formation, and subsequent failure, of producer co-operatives as marketing agencies. Grain producers' dissatisfaction with daily price fluctuations inherent in the open market led to the organization of provincial co-operatives whose objective was to establish price pooling mechanisms. In 1924, these organizations formed the Canadian Co-operative Wheat Producers Limited as a Central Selling Agency which pursued a price stabilization policy involving the purchase of wheat from producers in quantities which exceeded market requirements and price. This strategy led the Agency into overreaching its financial resources so that by 1930 both the provincial and federal governments had to step in and offer financial guarantees to back up the Agency's pooling arrangements.

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* Much of the discussion on the evolution of the Canadian Wheat Board is drawn from the Hall Commission Report, Volume I, 1977.

The Central Selling Agency closed its selling operations in 1931, but it was used as an agency of the federal government to support market prices and to dispose of the pool carryover of stocks from the 1930 crop. The inability of producer co-operatives to assume financial risks of great magnitude caused the federal government to intervene with the Canadian Wheat Board Act on July 5, 1935. The Act empowered the Board to establish annually a minimum price at which it would purchase wheat offered for sale by the producer and to dispose of wheat.

The Board's responsibilities and the scope of its activities grew steadily from its inception. Between 1935 and 1945, the marketing functions which previously rested with the elevator companies, were transferred to the Board, and the elevator companies became handling and warehousing operations with revenues accruing on a fee for service basis. In addition, the Canadian Wheat Board Act allowed the Board to sell and dispose of wheat acquired from both producers and the Canadian Co-operative Wheat Producers Limited, and to take delivery of wheat at a fixed minimum price regardless of short term market conditions. Later, the power of the Board was extended to include the marketing of western produced barley and oats.

Between 1937 and 1943, the Board's fixed minimum price remained above the market price. It was at this time that the marketing strategies used by the Board in fulfilling its

objectives with respect to protecting producers' income had their first impact on the configuration of the transportation and handling system[17]. In protecting producers from low prices, the Board took possession of wheat stocks by purchasing from producers at country elevators. There was, of course, no immediate opportunity to dispose of stocks without incurring a financial loss given that the Board's minimum price was above the market price.

Once existing facilities began to fill up, the Board was constrained in its ability to give effect to its strategies of income protection. In order to continue to fulfil its objectives, additional facilities were required to receive wheat from producers and the federal government acted to encourage the provision of space through the introduction of accelerated tax write-offs for temporary storage(18).

In the latter part of the 1942-43 crop year, world markets for grain began to improve and the emphasis shifted to the movement of grain out of storage facilities. Brisk business continued through the war years and the Board was able to dispose of all surplus stocks of wheat by 1945. By 1946, there seemed to be little doubt that the government supported the Board system of marketing. In July of that year, an agreement was signed between Canada and the United Kingdom in which the U.K. agreed to purchase 6,000,000 bushels of wheat

over the four years 1946/47 to 1949/50. The government tied the continuance of the Board to that agreement(19).

In March 1949, Canada signed the International Wheat Agreement. This agreement between exporting and importing countries had provisions regarding both price and volume. Within Canada, the administration of that Agreement was the responsibility of the CWB. During the 1946-1950 period wheat markets were marked by a transition from wartime shortage to general oversupply as European production recovered. This surplus condition became more acute during the 1950s. Canada experienced record crops, and surplus stocks began to build again. Carryover stocks jumped from 74 million bushels in 1945 to 112 million bushels in 1949. By the 1959/60 crop year, Canada's carryover stocks amounted to 600 million bushels(20).

The Board was unable to dispose of the high production primarily because of keen international competition and joint U.S/Canada policies on price control(21). Price control policies were possible because together the U.S. and Canada provided about 70 percent of world exports and thus had the leverage to exercise some control over price. Although the realized price for No. 1 Northern wheat stayed fairly high, carryovers still rose dramatically reaching 619 million bushels in the 1953/54 crop year.

As surplus stocks rose, the importance of the Board's income protection role was again enhanced. In response to the situation of weak markets relative to production and price, the Board acted to protect income by putting wheat into storage. Again, the need for facilities to receive the extra grain was manifest and the federal government stepped in with accelerated capital cost allowances to encourage the construction of additional storage space[22]. According to a Grains Council study "demands for space were so great..., that a 'Special Annex' category was licensed which comprised off-site storage and under which even such structures as curling rinks and airplane hangars were pressed into service"(23).

TABLE 7 shows the level of storage in the period 1935 to 1960. Temporary storage facilities were constructed during the years 1939-1949. Temporary licensing was abolished in 1950 and much of the temporary facilities were abolished and replaced by permanent storage in Special Annexes. Special annex storage reached a peak of 15.1 million bushels in 1956-57 and did not disappear until the early 1960s. The conclusion reached by the Grains Council study is interesting. It emphasizes that the increase in commercial storage space which occurred over this period was generated by the income protection strategy of the Board and not by the need for additional storage space to facilitate throughput(24). The Council's conclusion seems to be credible since the Board received more grain than it was able to sell.

The Board's strategy of income protection through accepting deliveries was short-lived. Delivery in excess of sales became infeasible and producers' income again suffered. The Board was unable to dispose of large stocks which had built up and the carrying costs on wheat stocks became increasingly burdensome to producers. The federal government had to step in and address the problem. Its response was the passage of the Temporary Wheat Reserves Act in 1956.

TABLE 7

LICENSED PUBLIC COUNTRY STORAGE FACILITIES IN WESTERN CANADA (1935-60)

YEAR	PERMANENT (m. tonnes)	TEMPORARY (m. tonnes)	SPECIAL ANNEX (m. tonnes)	TOTAL (m. tonnes)
1935-36	189.9			189.9
1936-37	189.4			189.4
1937-38	189.3			189.3
1938-39	189.7			189.7
1939-40	190.8			190.8
1940-41	201.3	72.5		273.8
1941-42	197.1	110.0		307.1
1942-43	197.0	112.7		309.6
1943-44	197.3	112.6		310.0
1944-45	196.9	111.1		308.0
1945-46	197.1	95.6		292.7
1946-47	197.2	76.9		274.1
1947-48	198.1	73.5		271.6
1948-49	201.5	71.2		272.6
1949-50	206.2	70.0		276.3
1950-51	283.1			283.1
1951-52	292.5		.6	293.2
1952-53	306.6		1.6	308.2
1953-54	319.8		4.4	324.3
1954-55	333.7		5.4	339.1
1955-56	345.2		8.5	353.7
1956-57	357.5		15.1	372.6
1957-58	365.8		15.0	380.8
1958-59	374.5		13.0	387.4
1959-60	381.9		11.4	393.3
1960-61	361.8		7.2	368.9

Source: Canadian Grain Commission, Grain Elevators in Canada.

3.3 The Federal Government's Policy on Grain Storage

The Temporary Wheat Reserves Act (TWRA) provided for a government subsidy to be paid to the Canadian Wheat Board to help cover carrying charges. The payment made was equal to a full year's carrying charges on that quantity of wheat in excess of 178 million bushels which was under Board control in commercial positions at July 31.

The high level of storage which occurred during the 1950s brought with it a change in the seasonal patterns of stocks in commercial store. Prior to 1954/55 stock levels were usually at their lowest point near the beginning of the crop year, ie. just prior to the harvest, and tended to peak just after harvest(25). With the TWRA, stock levels tended to peak at the July 31 date. Of course, under this Act the higher the stock level on July 31, the greater the subsidy. Hence, the Act had the effect of promoting storage, although this was not the intention of the subsidy.

TABLE 8 is illustrative of the effects of the TWRA. Carrying charges for wheat fluctuated throughout the period 1950 to 1960. On the other hand, TWRA payments showed a steady increase, except for 1960. Despite the fluctuation in carrying charges, TWRA payments were never less than 60 percent of carrying charges, except in 1954. This meant that the CWB was effectively shielded from increases in storage costs which averaged about 6¢ per bushel for the period. In

addition, the realized final price of No. 1 Northern stayed at a fairly high level with fluctuations from year to year.

TABLE 8

CARRYING COST OF WHEAT AND TEMPORARY WHEAT RESERVES ACT CONTRIBUTIONS 1950-1960

YEAR	PRODUCER BUSHELS ACQUIRED (M)	CARRYING CHARGES ($M)	TEMPORARY WHEAT RESERVE ACT ($M)	CARRYING CHARGES (Cents per bushel)	TWRA	DIFF.	REALIZED PRICE OF No. 1 NORTHERN ($/bushel)
1950	366.2	$22.4		6.1		6.1	$1.86
1951	533.0	23.0		4.3		4.3	1.84
1952	533.0	34.6		6.4		6.4	1.82
1953	398.0	52.5		13.1		13.1	1.56
1954	318.4	48.4	23.2	15.2	7.3	7.9	1.65
1955	352.2	43.4	29.2	12.3	8.3	4.0	1.61
1956	361.4	54.5	33.1	15.1	9.2	5.9	1.59
1957	367.0	56.3	39.6	14.9	10.5	4.4	1.62
1958	367.0	61.3	43.0	16.7	11.7	5.0	1.60
1959	377.4	64.9	48.5	17.2	12.9	4.3	1.59
1960	392.8	56.2	39.7	14.3	10.1	4.2	1.80

Source: Canada Grains Council, State of the Industry Report, 1973.

The response of the elevator companies to the forces at work during this period was largely as might be expected. Having used the income tax provisions which encouraged an increase in storage capacity, the companies also replaced temporary storage with permanent facilities. This occurred at a time when companies were experiencing sizeable increases in costs for labour, construction, maintenance and taxes. For example, between 1945 and 1960 elevator managers' salaries increased by 100 percent, municipal taxes by 179 percent, construction

costs by nearly 100 percent and maintenance and repairs by 100 percent(26).

3.4 Revenue Source of Primary Elevators

The Manitoba Grain Act, passed by Parliament in 1900, introduced the concept of regulating the rates charged by the primary elevator companies. The Act required the companies to file each year their maximum charges to producers for receiving, elevating, drying and shipping grain. These rates were subject to revision by the Governor-in-Council(27).

In response to continued pressure from producers for rate regulation, the Federal Government went one step further by passing the Canada Grain Act in 1912*. The Board of Grain Commissioners for Canada (now the Canadian Grain Commission) had the authority to set the maximum rates which primary elevator companies could charge for receiving, elevating, cleaning, drying and shipping grain. These rates became known as tariffs(28).

Traditionally, the Commission initiated annual tariff hearings and invited briefs from primary elevator companies and from affected organizations. Following review of the submissions, the Commission established the maximum primary

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* This Act consolidated the Grain Inspection and Manitoba Grain Acts, and it replaced the Office of Warehouse Commissioner with a Board of Grain Commissioners.

elevator tariffs. Up until 1973 the maximum rates were, in effect, the operating rates. In 1974 the Commission adopted a new concept of flexible tariffs. It established the maximum elevation tariffs and encouraged companies to price their services competitively(29).

As mentioned earlier, elevator companies derive income from other sources such as the purchase and sale of grain and the sale of fertilizers, chemicals, feed, seed and other farm supplies. However, the most important source of income is derived from elevation and storage charges. Elevation charges accrue against all grain received into primary elevators. Storage charges do not accrue on stored, i.e. unsold, grain until after an initial ten day period of free storage. Elevation charges tend to be more important to an elevator company as a source of income since they are based on the inward and outward movement of grain during the course of a crop year.

In the period 1945 to 1960, storage and handling tariffs were largely unchanged. Nevertheless, because of government assistance and huge volumes left in storage facilities, storage as a major source of revenue was adequate enough to allow companies to maintain their elevators without having to consolidate. Of course, one cannot underestimate the influence of the Temporary Wheat Reserves Act in re-enforcing the trend of no change in system configuration.

TABLE 9 Estimated Handling and Storage Revenues for Primary Elevator System

	WHEAT AND BARLEY			OATS			OTHER			TOTAL		STORAGE		TOTAL
year	Volume shipped (mil. bu.)	Handle Rate	Handle Revenue	Volume shipped	Handle Rate	Handle Revenue	Volume shipped	Handle Rate	Handle Revenue	Handle Revenue	Average in Store	Storage Rate	Storage Revenue	Revenue
1945-46	365.0	3¢	$10,950	110.2	3¢	$3,306	8.1	5¢	$405	$14,661	70.1	1/30¢	$5,686	$20,347
1950-51	383.7	4½¢	$17,267	90.3	3½¢	$3,161	10.8	5¢	$540	$20,967	128.1	1/30¢	$13,359	$34,326
1955-56	448.1	4½¢	$20,165	64.7	3½¢	$2,265	27.0	5¢	$1,350	$23,779	258.9	1/35¢	$27,000	$50,775
1960-61	511.4	4½¢	$23,014	41.6	3½¢	$1,456	32.7	5¢	$1,635	$24,469	301.5	1/30¢	$36,684	$61,153

Source: Canadian Grains Council, State of the Industry Report, 1973

N.B.: Revenue figures are in $ million.

Another point should be emphasized here. In the period under consideration there were considerable inefficiences in the car allocation system and this tended to reinforce the storage orientation of elevator companies. The final responsibility for car distribution lay with the railway companies. With burgeoning stocks in commercial positions, the railways failed to allocate cars in a rational manner, i.e. placing cars to match producer deliveries. As a result the situation was chaotic and stocks rose to unbearable proportions in some areas. It was this situation which led to the Bracken Inquiry* and, subsequently, the Bracken Formula under which grain cars were to be distributed to elevator companies in proportion

* An enquiry called by the government to examine issues in grain handling and transportation.

to a twelve month moving average of receipts of the six major grains. However, the problems in the grain handling and transport system were not lessened by these measures. Perhaps if freer conditions had prevailed in the grain merchandising process, or had tariff levels been more closely aligned to the costs of services, consolidation of elevators would have been encouraged during the 1950's, and the system would have been more throughput oriented.

Given this situation, there was little incentive for change since any company which attempted to consolidate under these conditions would have faced loss of storage revenue, and if it had offered a reduced handling tariff to attract producers to a larger point it had no assurance of boxcar allocation proportional to receipts. The company could not have unilaterally taken the course of consolidation since it would have resulted in loss of earnings.

CHAPTER 4

Primary Elevator System Configuration 1961-1975

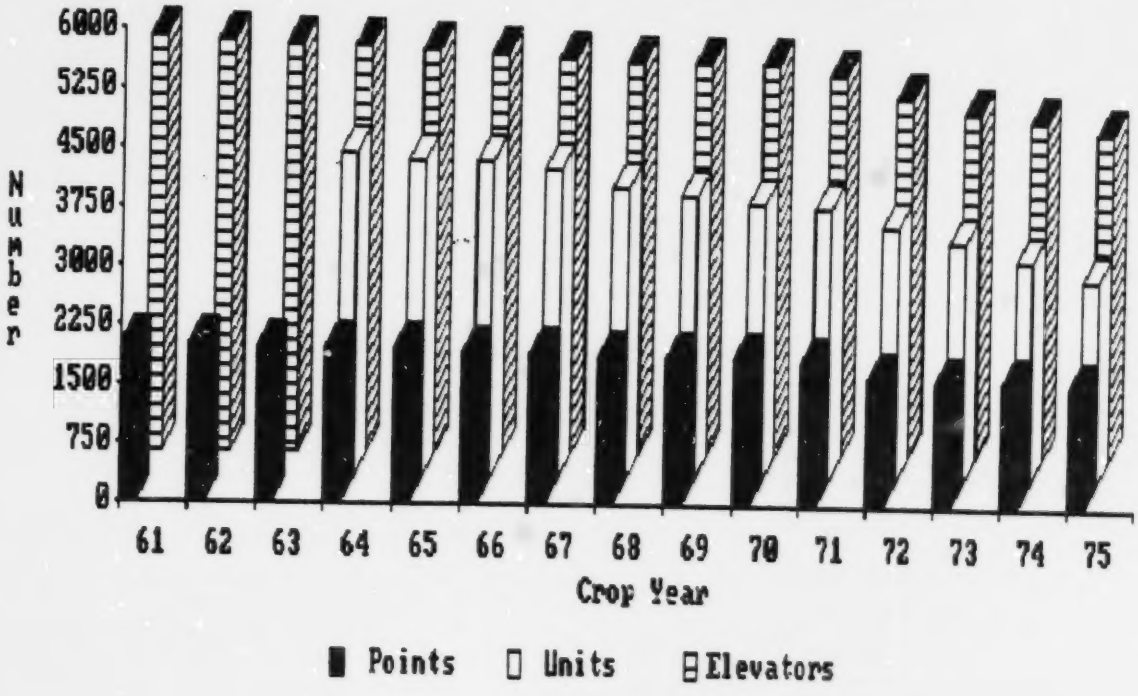
Prior to the mid-sixties, primary elevator companies placed a good deal of emphasis on storage to balance costs and revenues. Beyond that period, the economics of elevator operation coupled with significant institutional change inhibited the exclusive use of storage as a practical option. As a result, companies were compelled to rationalize their operation and effect cost-effective measures to stay on an even keel. In this period, the shift from a storage to a throughput orientation in elevator operation can be traced to the quota system, the block shipping system, the tariff structure and, most importantly, cost escalation. Escalating costs led the elevator companies to introduce cost control techniques and to make operational changes to deal with their financial situation.

4.1 Primary Elevator System Consolidation 1961-1975

CHART 1 and TABLE 10 indicate that there were 5263 primary elevator units in 1961. By 1975, however, that number had dropped to 4165, a reduction of 1098 or 20.9 percent. This was a relatively steep decline in comparison with the 1935-60 period when the number of elevators declined by only a modest 7.5 percent over a much longer period. Similar reductions were also apparent in the number of delivery points, elevator companies and operating units (an operating unit is comprised

of two or more licensed elevators owned and operated by the same company, under one manager).

CHART 1 ELEVATORS, DELIVERY POINTS AND OPERATING UNITS



The number of grain delivery points fell from 2055 in 1961 to 1556 in 1975, a reduction of 499 or 24.3 percent; the number of operating units fell by 1513 between 1964 and 1975, showing a 36.6 percent decline; and the number of elevator companies declined from 15 in 1961 to 9 in 1975, a reduction of 40 percent.

TABLE 10

PRIMARY ELEVATOR CONFIGURATION 1961-1975

YEAR*	PRIMARY ELEVATORS (No.)	DELIVERY POINTS (No.)	COMPANIES (No.)	OPERATING UNITS (No.)	ELEVATOR STORAGE CAPACITY (m.bus.)	AVERAGE ELEVATOR STORAGE CAPACITY (000 bus.)	AVERAGE CAPACITY PER OPERATING UNIT (000 bus.)
1961	5263	2055	15	n.a.	368.5	70.0	n.a.
1962	5223	2030	15	n.a.	374.8	71.8	n.a.
1963	5184	2012	15	n.a.	378.5	73.0	n.a.
1964	5174	2002	15	4136	376.4	72.7	91.0
1965	5143	1983	15	4062	381.2	74.1	93.8
1966	5083	1960	15	4042	384.4	75.6	95.1
1967	5032	1941	13	3980	389.6	77.4	97.9
1968	4999	1921	13	3747	392.4	78.5	104.7
1969	4982	1915	13	3652	396.3	79.5	108.5
1970	4971	1907	13	3539	398.8	80.2	112.7
1971	4849	1835	12	3477	393.9	81.2	113.3
1972	4567	1672	12	3240	377.8	82.7	116.6
1973	4383	1617	10	3073	412.2	94.0	134.1
1974	4292	1594	10	2814	405.8	94.5	144.2
1975	4165	1556	9	2623	398.2	95.6	151.8

* as of August 1

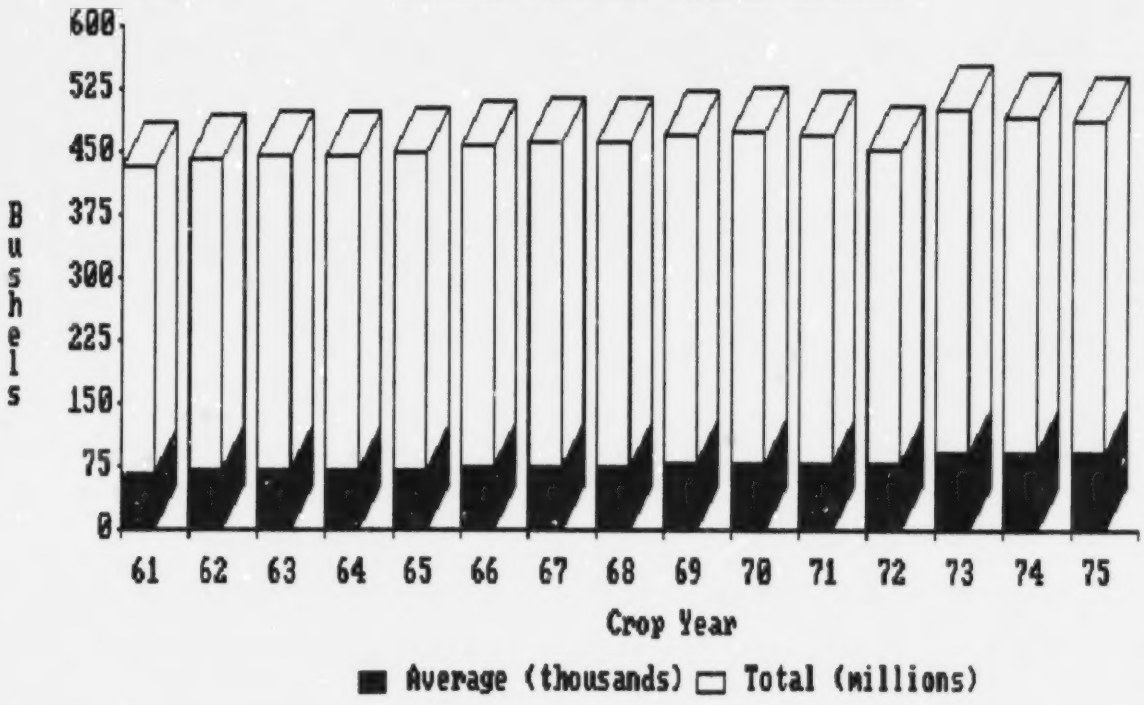
Source: Canadian Grain Commission, Grain Elevators in Canada

N.B.: Companies refer to those having at least 5 elevators

The trend towards greater total elevator storage capacity and higher storage capacity per elevator unit became more pronounced after 1960. Total storage capacity increased steadily during this period until it peaked in 1973 at 412.2 million bushels. Beyond 1975, total storage capacity declined at a slow rate. Despite the rapid reduction in the total number of elevator units on the prairies, average elevator storage capacity increased dramatically jumping from 70,000 bushels in 1961 to 95,000 bushels in 1975, an increase

of 36.6 percent (see CHART 2). Average capacity per operating unit showed a continuous increase as well moving from 91,000 bushels in 1964 to 151,000 bushels in 1975, an increase of 66.8 percent.

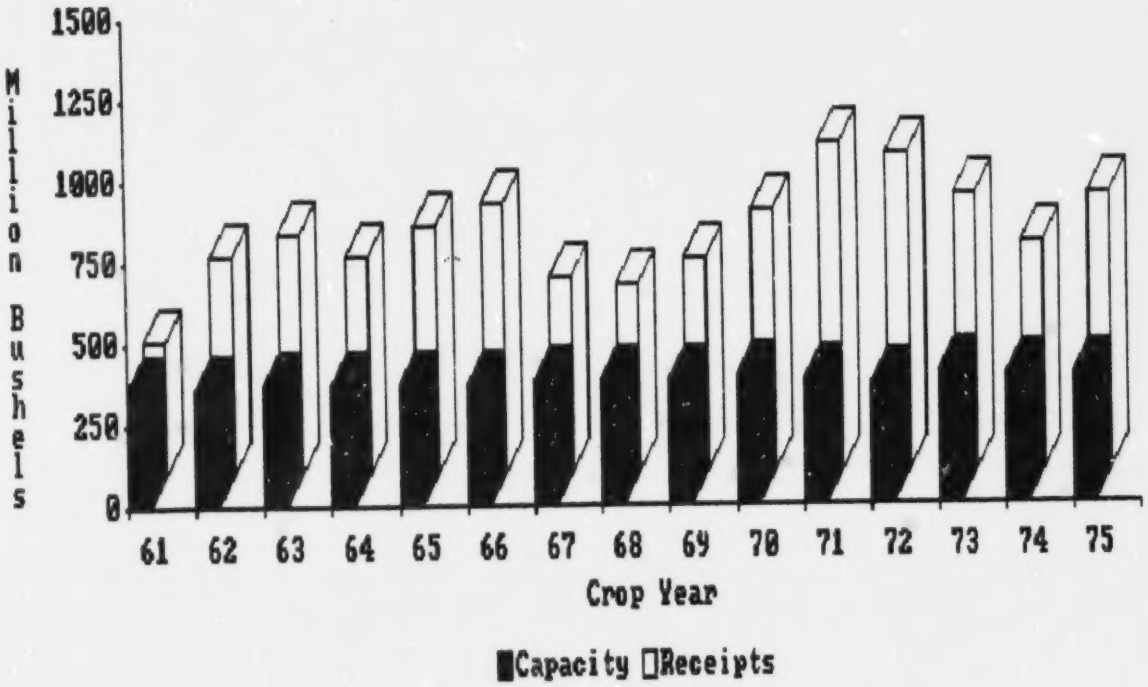
CHART 2 ELEVATOR TOTAL AND AVERAGE CAPACITY



The increase in storage capacity per elevator unit and the decline in the number of elevators and delivery points marked the most important trend in the rationalization process. In an effort to receive and ship more grain, companies closed uneconomic elevator facilities and made investment in plant and equipment. By having more efficient units, companies were able to achieve higher levels of throughput. For example, (see TABLE 11 on page 87 and CHART 3), in 1960 receipts at primary elevators were just over 555 million bushels. By 1975

receipts had risen above 800 million bushels, despite the decline in both numbers of elevators and delivery points.

CHART 3 CAPACITY AND RECEIPTS



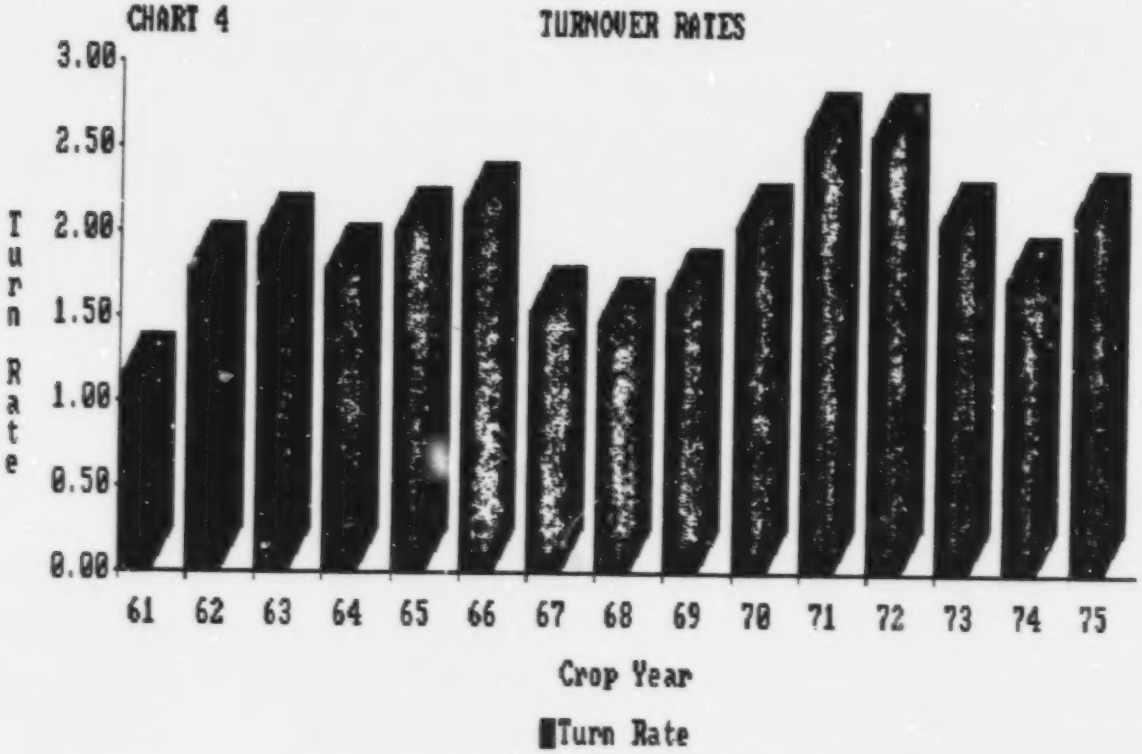
Turnover ratio (CHART 4), measured by the ratio of grain delivered to the primary elevator network to storage capacity, although low, still showed improvement during that period relative to the situation which existed during the 1940s, 1950s, and early 1960s when turnover ratios were well below 2.

TABLE 11

PRIMARY ELEVATOR TURNOVER RATIOS

CROP YEAR	LICENSED STORAGE CAPACITY (000 bushels)	RECEIPTS AT PRIMARY ELEVATORS (000 bushels)	TURNOVER RATIO
1960	361,800	555,277	1.53
1965	381,200	769,493	2.02
1970	398,800	815,910	2.04
1975	398,200	872,560	2.19

Source: Canadian Wheat Board Annual Reports



In terms of the spatial distribution of elevator units, Manitoba had 692 elevators in 1961 but that number was reduced to 502 by 1975, a reduction of 27.5 percent. This was the fastest rate of elevator decline when compared to the other provinces. CHART 5 and TABLE 12 indicate the second fastest

rate of decline occurred in Saskatchewan where the number of units dropped from 2,886 in 1961 to 2309 in 1975, a reduction of 20 percent. The rate of decline was almost the same in Alberta/B.C. where the number dropped by 19.8 percent. This trend indicates a reversal from the earlier period, 1935 to 1960, when the fastest rate of decline occurred in Saskatchewan, followed by Alberta/B.C. and Manitoba.

CHART 5

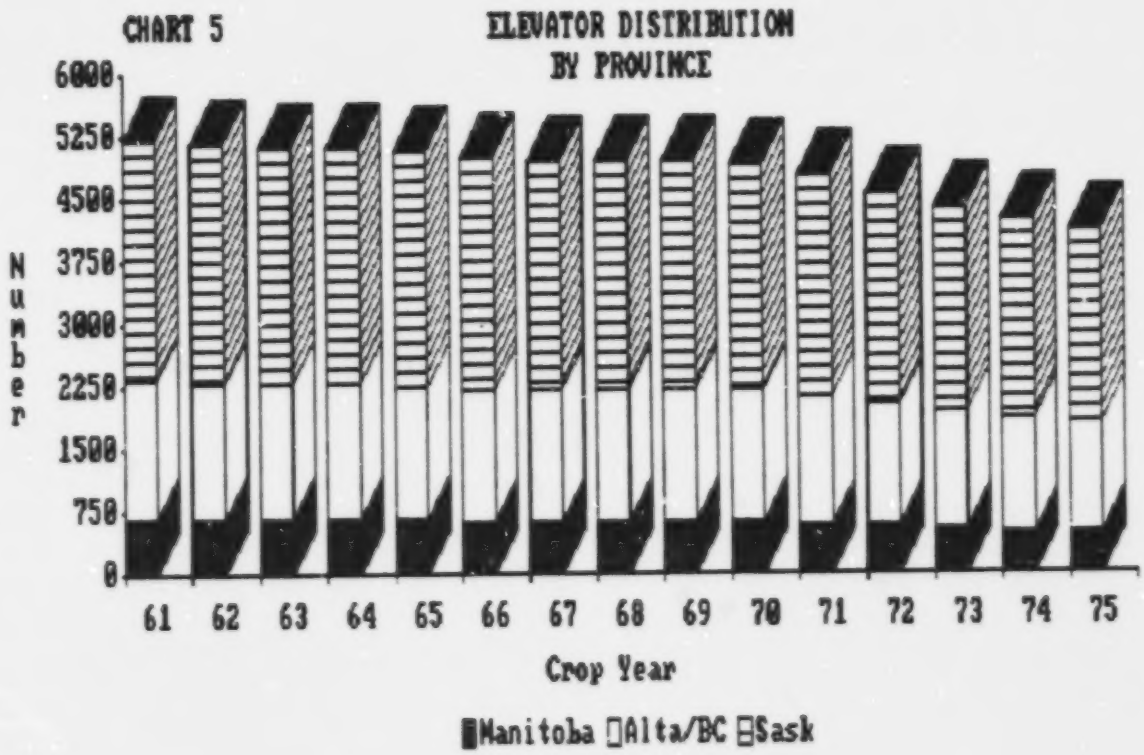


TABLE 12

SPATIAL DISTRIBUTION OF PRIMARY ELEVATORS 1961-1975

TABLE 12.1 - MANITOBA

YEAR*	ELEVATORS (No.)	STORAGE CAPACITY (tonnes)	AVERAGE CAPACITY (tonnes)	AVERAGE CAPACITY (bushels)
1961	692	1,311,365	1,895	69,630
1965	669	1,373,550	2,053	75,435
1970	642	1,459,040	2,272	83,482
1975	502	1,257,780	2,505	92,044

TABLE 12.2 - SASKATCHEWAN

YEAR*	ELEVATORS (No.)	STORAGE CAPACITY (tonnes)	AVERAGE CAPACITY (tonnes)	AVERAGE CAPACITY (bushels)
1961	2,886	5,074,744	1,758	64,596
1965	2,842	5,639,200	1,984	72,900
1970	2,732	5,897,590	2,158	79,293
1975	2,309	5,235,230	2,267	83,299

TABLE 12.3 - ALBERTA/B.C.

YEAR*	ELEVATORS (No.)	STORAGE CAPACITY (tonnes)	AVERAGE CAPACITY (tonnes)	AVERAGE CAPACITY (bushels)
1961	1,688	3,427,593	2,030	74,590
1965	1,632	3,627,800	2,223	81,682
1970	1,597	3,811,140	2,386	87,671
1975	1,354	3,456,040	2,552	93,771

* as of August 1

Source: Canadian Grain Commission, Grain Elevators in Canada

N.B.: i) This publication switched its unit of measurement from bushels to tonnes in 1962.
ii) Conversion factor from tonnes to bushels is wheat equivalent i.e. 1 tonne = 36.744 bushels.

A major reason for this reversal appears to be the significant shift in ownership patterns during that period. Between 1966 and 1973, there were five mergers which together involved 1250 elevators(30). Most of these elevator units were acquired by the grain co-operatives who subsequently closed them because of their obsolescence. TABLE 12 indicates that between 1970 and 1975 a significant number of these closures occurred in Manitoba where there was a 20 percent decline compared to a 15 percent decline in both Saskatchewan and Alberta/B.C..

Average elevator storage capacity continued to increase in all the western provinces. Manitoba maintained its lead in average elevator storage capacity, showing an increase of 22,414 bushels over the 1961 level, a 32.2 percent jump. The level of increase was smaller in Saskatchewan than Alberta/B.C. However, Saskatchewan recorded the larger percentage increase in storage capacity per elevator unit. The level of increase, between 1961 and 1975, was 18,703 bushels for Saskatchewan and 19,181 bushels for Alberta/B.C., reflecting a 28.9 percent and 25.7 percent increase respectively.

The rationalization which took place in the period 1961 to 1975 tended to diminish the level of competition at delivery points, especially between 1961 and 1971. Beyond 1971 the number of multi-company delivery points stayed fairly stable.

TABLE 13 shows that between 1961 and 1975 there was a reduction of 499 delivery points, or 24.3 percent. Within that time frame, the number of competitive delivery points fell by 561, a reduction of 44.5 percent. From these numbers, it is clear that the number of single company points had increased. On a provincial basis, Saskatchewan and Alberta/B.C. have had much more competition at delivery points than Manitoba (see CHART 6 and TABLE 13A).

TABLE 13

PRIMARY ELEVATOR COMPETITION

YEAR	DELIVERY POINTS (No.)	DELIVERY POINTS WHERE COMPETITION EXISTED (No.)	SINGLE COMPANY POINTS (No.)	COMPETITIVE DELIVERY POINTS (%)
1961	2055	1261	794	61.4
1962	2030	1262	768	62.2
1963	2012	1246	766	61.9
1964	2002	1248	754	62.3
1965	1983	1245	738	62.8
1966	1960	1237	723	63.1
1967	1941	1230	711	63.4
1968	1921	1212	709	63.1
1969	1915	1154	761	60.3
1970	1907	1105	802	57.9
1971	1835	1068	767	58.2
1972	1672	766	906	45.8
1973	1617	755	862	46.7
1974	1594	706	888	44.3
1975	1556	700	856	45.0

Source: Canadian Grain Commission, Grain Elevators in Canada

N.B.: "Delivery points where competition existed" imply two or more companies serving that point.

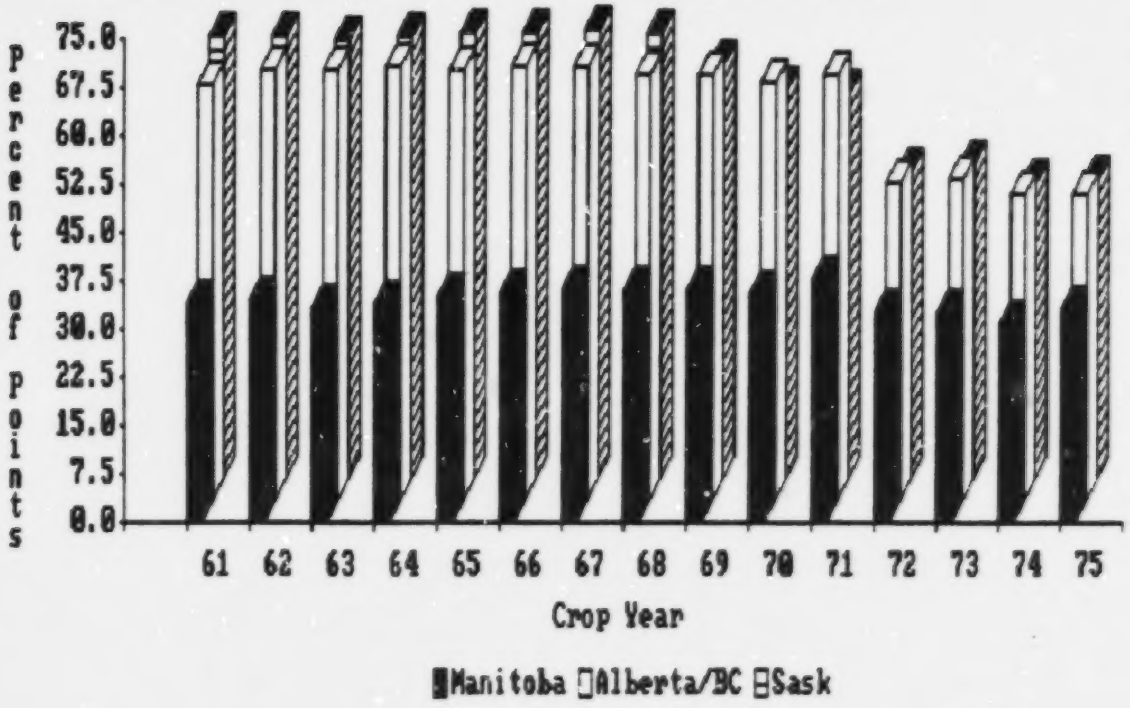
TABLE 13A

PROVINCIAL BREAKDOWN OF PRIMARY ELEVATOR COMPETITION

YEAR AS OF AUGUST 1	MANITOBA				SASKATCHEWAN				ALBERTA/B.C.			
	DELIVERY POINTS (NO.)	COMPETITIVE POINTS (NO.)	SINGLE COMPANY POINTS (NO.)	COMPETITIVE POINTS (%)	DELIVERY POINTS (NO.)	COMPETITIVE POINTS (NO.)	SINGLE COMPANY POINTS (NO.)	COMPETITIVE POINTS (%)	DELIVERY POINTS (NO.)	COMPETITIVE POINTS (NO.)	SINGLE COMPANY POINTS (NO.)	COMPETITIVE POINTS (%)
1961	375	129	246	34.4	1099	755	344	68.7	581	377	204	64.9
1962	371	129	242	34.8	1096	756	340	69.0	563	377	186	67.0
1963	366	124	242	33.9	1088	746	342	68.6	558	376	182	67.4
1964	363	125	238	34.4	1082	746	336	68.9	557	377	180	67.7
1965	359	127	232	35.4	1067	743	324	69.6	557	375	182	67.3
1966	346	125	221	36.1	1062	737	325	69.4	552	375	177	67.9
1967	343	125	218	36.4	1048	733	315	70.0	550	372	178	67.6
1968	333	123	210	36.4	1041	723	318	69.5	547	366	181	66.9
1969	333	121	212	36.9	1037	671	366	64.7	545	362	183	66.4
1970	332	120	212	36.1	1032	630	402	61.0	543	355	188	65.4
1971	315	121	194	38.4	991	598	393	60.3	529	351	178	66.4
1972	289	96	193	33.2	908	435	473	47.9	475	238	237	50.1
1973	279	93	186	33.3	875	431	444	49.3	463	233	230	50.3
1974	274	86	188	31.4	863	400	463	46.3	457	221	236	48.4
1975	262	88	174	33.6	845	396	449	46.9	449	217	232	48.3

SOURCE: CANADIAN GRAIN COMMISSION, GRAIN ELEVATORS IN CANADA.

CHART 6 DELIVERY POINT COMPETITION BY PROVINCE



The increase in the number of single company points and the reduction in delivery point competition occurred because the total volume of grain deliveries at many points was not large enough to support more than one grain company and in some instances would not support even one. This situation holds even today.

The move towards a throughput oriented grain collection system with larger but fewer and more efficient elevator units was hastened by cost escalation and institutional changes in the grain handling system. New demands were placed on the grain marketing sytem and the need for a throughput oriented grain handling system was evident.

4.2 Institutional Change and Adjustment

Strong demand for Canadian grains in the early 1960s forced the industry to re-evaluate the storage orientation which was prevalent up to that time. It was the Russian entry into the grain buying business which placed a strain on the handling system. At the time of its first purchase from Canada in 1963/64, Russia requested all that Canada could supply*. This placed an unprecedented strain on the transportation and handling system since the system was forced to put through increasing volumes.

There was a tendency to use current production to meet the high sales levels of 1963-64 and 1966-67 while high stock levels were maintained in commercial positions(31). However, when the demand for Canadian grains slackened in the late 1960s, excessive production created unprecedented carry-overs. With stocks at a very high level, the Canadian Wheat Board was constrained in its ability to perform its income support role(32) and stocks built up on farms. As a result, producers were forced into extensive borrowing under the Prairie Grain Advance Payments Act. Operation LIFT (Lower Inventories For Tomorrow) was introduced in 1970-71(33) and it encouraged participants in the grain handling and transport system to be more throughput oriented.

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* See Canada Grains Council Study on Grain Handling and Transportation, State of the Industry Report (1973), p. 49

In this period, the Canadian Wheat Board was forced to play down its role of protecting producers from the fluctuations of world markets, in part, because it had to meet long term commitments placed on it by the centralized purchasing practices of some foreign states. The Board's attitude to marketing was to sell whatever producers wished to deliver. In effect, the Board had the responsibility to ensure that certain grades and types of grain could be brought forward at certain times. The pressure brought on the system by these factors made evident the need to give high priority to the development of better co-ordination of grain movement from farm to export positions(34).

The Board addressed the problems inherent in the grain handling and transport system by forming the Senior Grain Transportation Committee. This group was formed in 1965 and it comprised senior representatives from the various organizations involved in grain movement. The Committee was charged with the responsibility of introducing mechanisms to improve the co-ordination of grain movement from the farms to export positions. Its major contribution was the Block Shipping System.

4.2.1 Block Shipping System

The Block Shipping System, introduced in 1969-70, specifically addressed the problems which plagued the the grain car allocation system. It provided a means of

allocating rail cars geographically, among types of grain and among companies whereby train runs in the country could be more efficiently scheduled and various delivery requirements met. The grain producing areas of the prairies were divided into 48 blocks, each of which served about 400 miles of track of one railway, 40 delivery points, and 125 elevators(35). Each of these blocks was based on railway train runs by subdivision whereby the railway could provide flexible train service each week to the various branchlines in a block.

There were four primary effects(36) of the Block Shipping System, all of which had a significant impact on the grain handling and transportation system. First, it permitted the improved co-ordination that was required by the Board to meet specific commitments. This co-ordination was achieved largely because sales could now be more closely matched with orders and in turn with rail cars.

Second, because ordering proceeded on a weekly basis, and because demand, orders, and rail cars were in theory exactly matched, it facilitated the matching of the content of cars to outbound shipments. Thus fewer instances of terminal congestion arose, more expeditious unloading and faster turnaround of rail cars was

achieved, and the throughput capability of the overall system was substantially increased.

Third, the Block Shipping System permitted the effects of the Bracken Formula, referred to earlier, to come into play. The producer was more assured of the capability to deliver to the elevator of his choice at times when stock levels were high, and the elevator companies were no longer subject to the railways' car distribution practice in creating space. The Block system enabled elevator companies to manage inventory levels in their own elevator systems to the extent that cars were available to the grain company within the block.

Fourthly, the Block Shipping System allowed for smoother operation of the overall system in the sense that the railways were able to improve their car turn-around time and elevator companies benefited through improved throughput both at their primary and terminal facilities. The new forces in grain marketing which developed during the 1960s and 1970s and which spurred the development of the Block Shipping system, also motivated a re-examination of the quota system in 1970.

4.2.2 Quota System

The quota system, as it was originally designed in the 1940s, was a means for the Wheat Board to provide delivery opportunity to producers on an equitable basis at times when supply exceeded storage and throughput capacity. With the Board's new approach of selling whatever producers delivered, the Board had a limited need to control the inbound flow to country elevators.

With an increasing trend towards long term commitments, the Wheat Board had to know, as accurately as possible, what grains were available to move forward. As well, it had to ensure that grain cars were available when required. Hence, the original quota system was redefined to bring it in line with the needs of the grain handling system. Under the revised system, the role of the quota system was to bring into primary elevators at the required time, the types, grades and quantities of grain required to meet market demand(37). This meant that the system had shifted emphasis from a storage to a throughput role and primary elevator companies had incentives to rationalize their operation.

4.2.3 Tariffs

In the previous chapter, an attempt was made to assess the impact of storage tariffs on the configuration of the primary elevator system. It was stated that storage

tariffs were only one element which led to the storage orientation which dominated the primary elevator system in that era. In the period 1961-1975, storage, as a means of revenue, declined in importance and the amount of grain a company could put through its facilities had become very important. Hence, handling tariffs became relatively more important than storage charges.

TABLE 11 and CHART 4 indicate that elevators were, on average, achieving only two turns per crop year during the period to 1970. That implied that handling revenues were not sufficient to maintain the balance between revenues and costs which persisted during the early 1960s. In fact, costs outstripped revenues despite significant increases in the maximum handling tariff.

The maximum handling tariff which elevator companies charged up to 1973 plus the fixed storage rate were insufficient to meet the rising costs associated with new elevator construction and renovation. Construction costs alone increased by 60 percent between 1960 and 1970(38). Within that same time frame the handling tariff increased by only 1.25¢ per bushel or 27.8 percent. Storage tariffs were unchanged. TABLE 14 indicates substantial improvements in handling revenue between 1961 and 1975 due primarily to increased

shipments from primary elevators. Storage revenue fluctuated in line with the average volumes in store.

TABLE 14 Estimated Handling and Storage Revenue for Primary Elevator System 1961-1975

	WHEAT AND BARLEY			OATS			OTHER			TOTAL		STORAGE		TOTAL
year	Volume shipped (mil. bu.)	Handle Rate	Handle Revenue	Volume shipped	Handle Rate	Handle Revenue	Volume shipped	Handle Rate	Handle Revenue	Handle Revenue	Average in Store	Storage Rate	Storage Revenue	Revenue
1961-62	460.2	4½¢	$20,710	25.0	3½¢	$875	25.6	5¢	$1,280	$21,584	224.5	1/30¢	$27,315	$48,899
1965-66	710.2	4½¢	$31,960	55.1	3½¢	$1,929	49.9	5¢	$2,495	$36,383	245.5	1/30¢	$29,870	$66,252
1970-71	680.9	5 3/4¢	$39,152	43.9	4½¢	$1,976	87.6	5¢	$4,380	$45,508	296.3	1/30¢	$36,050	$81,558
1975-76	772.8	9¢	$69,552	51.7	7½¢	$3,748	54.9	10½¢	$5,764	$79,064	186.5	1/30¢	$22,690	$101,754

Source: Canadian Grains Council, State of the Industry Report, 1973

N.B.: Revenue figures are in $ million.

Given the inadequacy of handling and storage revenues to meet increasing operational costs, elevator companies sought alternative sources of revenue. It was during this period that companies became involved in merchandising of farm supplies and the provision of ancillary services. The selling of farm supplies was developed not only as a revenue source but also as part of the agricultural service centre concept which evolved as a competitive factor in the system(39).

4.3 Elevators Costs and Revenues

Before the early 1960s, elevator companies did not feel the full impact of cost escalation because of federal government and Wheat Board action. With the throughput orientation which companies assumed after 1963 there were visible manifestations that elevator companies were under considerable financial strain. A good indication of the impact of escalating costs was the number of elevators which were closed, most of which were small and inefficient, and the number of companies which ceased to exist.

Data on elevator costs/revenues were collected by the Canada Grains Council for a study[40] on Grain Handling and Transportation done in 1973. The data indicated that between 1967 and 1972 the major companies experienced considerable losses in their primary elevator operations despite unprecedented levels of throughput. TABLE 15 indicates that costs outstripped revenues each year between 1967 and 1972 inclusive.

The largest single component in the cost structure of primary elevators was labour. Labour costs accounted for well over 30 percent of total costs throughout the 1967-72 period. Although part of the labour costs was attributable to added labour input to handle the increased volume of grain flowing through primary elevator units, a substantial part of costs was associated with keeping the system in operation. Other

variable costs consisting of such items as electricity, telephone, bank charges and stationery also rose significantly.

During the period 1967 to 1972 fixed costs accounted for roughly 50 percent of total costs. Fixed costs comprising municipal taxes, building insurance, depreciation, return on investment (ROI) and overhead expenses increased by over 23 percent during the period 1967 to 1972. Yet despite a 45.5 percent increase in revenues, companies collectively still experienced losses in excess of $20 million per year.

In order to meet these losses, elevator companies cross-subsidized their operation with terminal earnings and sale of farm equipment and supplies. While these measures did provide some relief from escalating costs they did not fully address the problem. The number of inefficient, small elevators was reduced in order to enhance the efficiency of the system.

TABLE 15

PROFIT (LOSS) POSITION OF PRIMARY ELEVATORS
1967/68 - 1972-73

COSTS	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73
			($ million)			
Salaries	23.9	24.8	25.6	27.2	31.0	34.2
Other Variable	14.5	13.3	13.9	14.8	16.5	16.9
Total Variable Costs	38.4	38.1	39.5	42.0	47.5	51.1
Direct Fixed Costs	12.7	14.0	13.9	13.5	14.8	16.6
Overhead	9.4	9.5	10.9	11.8	14.0	14.6
ROI	17.2	17.2	17.2	17.2	17.2	17.2
Total Fixed Costs	39.3	40.7	42.0	42.5	46.0	48.4
Total Variable + Fixed	77.7	78.8	81.5	84.5	93.5	99.5
Revenues						
Board Grain						
a) Handling	23.3	24.1	28.4	31.8	44.3	46.7
b) Storage	25.9	27.5	28.6	25.7	22.4	22.0
Non-Board	1.9	1.7	2.3	5.0	3.6	5.8
Rental Revenue	1.2	1.3	1.4	1.5	1.6	1.6
Grand Total	52.3	54.6	59.7	64.0	71.8	76.1
Profit (Loss)	(25.4)	(24.2)	(21.8)	(20.5)	(21.7)	(23.4)
			(million bushels)			
Handle (8 Companies)	480	470	535	645	833	840

Source: Grain Handling and Transportation : Definition of the Problem, Canada Grains Council, September 1974.

4.4 Cost Control

In order to contain escalating costs, primary elevator companies reverted to a number of cost saving techniques. These included mergers, saw-offs, sale of individual units, negotiated off-setting closures wherein companies agreed to withdraw from markets, unilateral closures, operational changes which involved computerization of their facilities and

two point operation by a single manager. Together, these measures served largely to reduce the number of elevators and improve the overall efficiency of the system.

4.4.1 Saw-Offs

Consolidation occurred through saw-offs in instances where two companies made arrangements so that one would consolidate an elevator of the second company with its own existing facilities. Under these circumstances, it was not unusual for one manager to operate both elevators as a single operating unit. The second company would, in turn, take over a similar operation at another point. This process is known as a 'saw-off' and, in the past, it has been used to reduce the number of primary elevators in western Canada.

Precise data on the number of 'saw-offs' are unavailable, but this technique has been widely used to reduce delivery points where throughput was less than 250,000 bushels(41). A major study(42) done in 1978-79 found that of the changes from 1973 to 1978 there were 274 closures, 61 additions, and 66 saw-offs between companies.

4.4.2 Mergers

Saw-offs and mergers were the major practices employed to effect cost control in the primary elevator system.

A study[43] done in 1974 found that the combined effects of saw-offs and mergers reduced the number of company points by about 42 percent. As mentioned earlier, between 1966 and 1973 there were 5 mergers involving about 1250 elevators. As a result of these mergers the number of elevators declined dramatically between 1971 and 1972. For example, there were 4849 elevators in 1971. In 1972 that number fell to 4567, a reduction of about 6 percent, compared to an average yearly reduction of about 3 percent between 1965 and 1970.

By merging their operation, elevator companies were able to achieve greater efficiency in overhead and administrative costs. However, the use of mergers was limited by the location of elevator units. Generally, mergers were difficult to achieve because of the distance between delivery points where elevators were located.

4.4.3 Unilateral Closures

Elevator companies used this method extensively to rationalize their operation. This method worked well in instances where elevator units were obsolete and non-competitive. Older units were too costly to renovate and they lacked the technical capability and size to operate efficiently. Between 1961 and 1975 the number of delivery points fell by 499 (TABLE 10). Most

of these closures occurred at single company points and many multi-company points became single company points.

Companies were able to minimize costs through unilateral closures because, once a unit was closed, there was only a limited liability in the form of some municipal tax obligation remaining until such time that the facilities were totally removed.

4.4.4 Operational Changes

Operational changes were introduced in order to improve the efficiency of the primary elevator system. Such changes included the use of computers and mechanized accounting procedures. Through the use of computers, elevator managers were better able to make decisions based on readily available information. It also represented substantial cost savings in terms of the reduction of man-hours required to perform a task. Further savings were realized through the operation of two or more elevators by a single manager. For example, in 1964, there were 4136 operating units to 5174 primary elevators, or about 1.25 elevators per unit on average. By 1975, the number of operating units fell to 2623 and the number of elevators to 4165, or an average of about 1.59 elevators per unit.

By putting several elevators under one manager, companies were able to effectively reduce their labour costs which, as mentioned earlier, were a significant component of total costs. It also meant that managers had greater sway over the functioning of elevators located in a particular area.

Taken together, the cost control measures outlined above have had a significant impact on the configuration of the primary elevator system in Western Canada. These measures facilitated the consolidation which occurred during that period and beyond.

CHAPTER 5

Recent Trends in the Rationalization Process 1976-1983

The previous chapters have described the dramatic decline in the number of primary elevator companies, primary elevators, delivery points and operating units. This contraction which began around the latter part of the 1930s has continued to this point in time. This chapter will focus attention on the rationalization process in the last eight years and assess some of the factors which have had an impact on the grain handling system.

5.1 Recent Trends in Elevator Consolidation

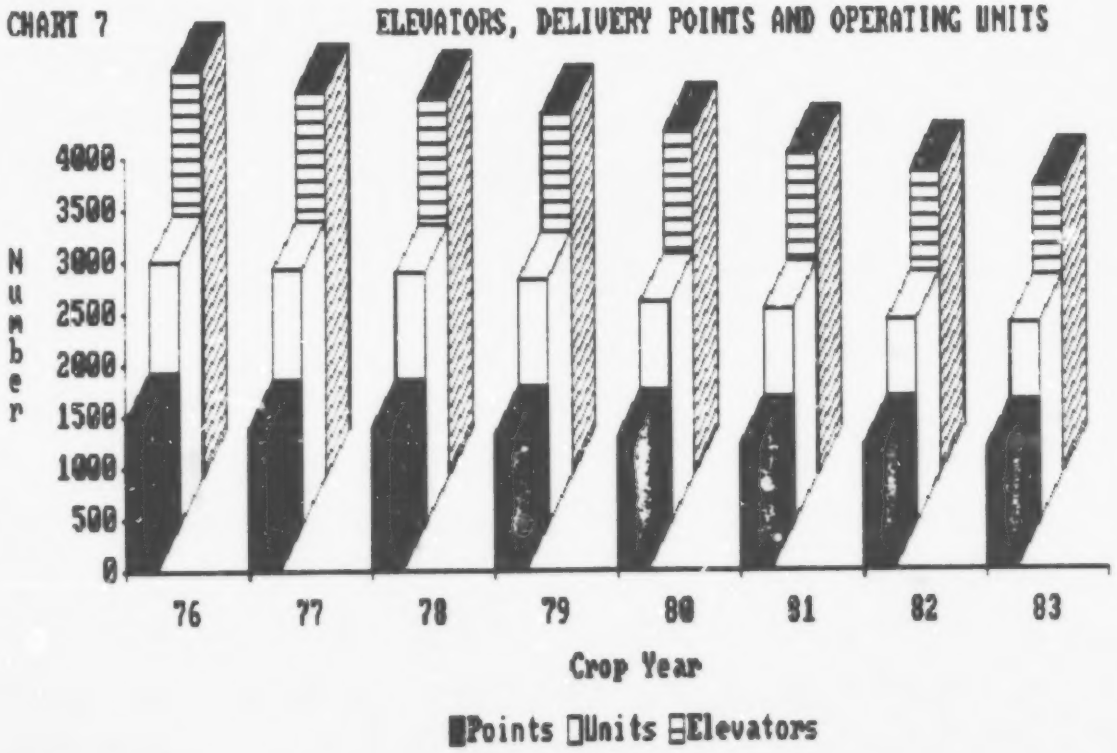
In the last eight years there has been a continuing trend towards a smaller number of elevators, delivery points and operating units. This trend has coincided with upward movement in the average storage capacity per elevator and operating unit. Total elevator storage capacity has not increased, however, and in fact has been declining since the early 1970s.

TABLE 16 and CHART 7 show that, in the relatively short period, 1976 to 1983, the total number of primary elevators in western Canada has declined from 3,964 to 2,800, a reduction of 1164 elevator units, or 29.4 percent. This has been by far the fastest rate of decline in the number of elevators when compared with the two longer periods under consideration, 1935-60 and 1961-75. In the twenty-six year period 1935-60

there was a decline of 7.5 percent while in the fifteen year period 1961-75 the reduction was 20.9 percent. In the period 1935 to 1983 the reduction in the number of primary elevators in western Canada was, indeed, dramatic. From a high of 5729 in 1935 the number fell to 2786 in December 1983, a reduction of 2943 or 51.4 percent.

The number of delivery points* showed a far faster rate of decline in 1976-1983 than in the periods 1935-60 and 1961-75. TABLE 16 and CHART 7 show that the number of delivery points fell from 1495 in 1976 to 1181 in 1983, a reduction of 314 or 21 percent over an eight year period. Between 1961 and 1975,

CHART 7 ELEVATORS, DELIVERY POINTS AND OPERATING UNITS



* Delivery point data available only from 1945.

the number of delivery points fell by 24.3 percent and, in 1935-60 it fell by a modest 2.1 percent. Overall, in the period 1945 to 1983, the number of delivery points fell from 2113 to 1181, a reduction of 932 or 44.1 percent.

The ratio of primary elevators to delivery points has remained relatively close throughout the period 1945 to 1983. In 1945, there were 5463 elevators spread over 2113 delivery points, a ratio of 2.59:1. In 1961, there were 5263 primary elevators to 2055 delivery points, a ratio of 2.56:1 and, in 1983 the ratio stood at 2.37:1 with 2800 elevators located at 1181 delivery points. These numbers indicate that, on a system wide basis, there are, on average, at least two primary elevators at each grain delivery point.

TABLE 16

PRIMARY ELEVATOR CHARACTERISTICS (1976-83)

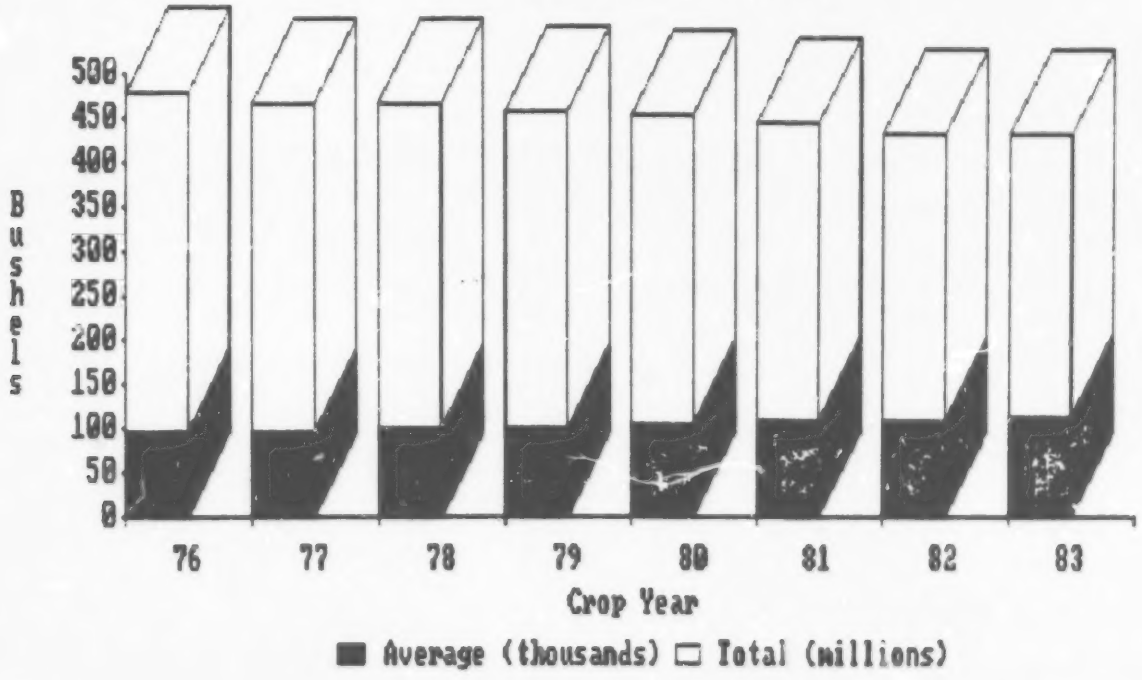
YEAR*	LICENSED PRIMARY ELEVATORS (No.)	NUMBER OF DELIVERY POINTS (No.)	NUMBER OF COMPANIES (No.)	NUMBER OF OPERATING UNITS (No.)	LICENSED ELEVATOR CAPACITY (M bushels)	AVERAGE ELEVATOR CAPACITY (bush.)	AVERAGE CAPACITY PER OPERATING UNIT (bush.)
1976	3,964	1,495	9	2,546	385.2	97,175	151,296
1977	3,739	1,417	9	2,467	372.6	99,652	151,034
1978	3,658	1,394	8	2,440	369.8	101,093	151,034
1979	3,528	1,351	8	2,376	362.1	102,636	152,399
1980	3,324	1,295	8	2,162	350.0	105,295	161,887
1981	3,133	1,246	8	2,075	340.3	108,618	164,000
1982	2,934	1,217	8	1,975	325.5	110,941	164,810
1983	2,800	1,181	8	1,938	321.4	114,786	165,841

* as of August 1

Source: Canadian Grain Commission, Grain Elevators in Canada

While total elevator storage capacity has continued to decline, average capacity per elevator and operating unit continues to show an upward trend. In 1935, the average storage capacity per elevator was about 33,000 bushels. In 1961, average elevator storage capacity had risen to about 70,000 bushels, an increase of over 100 percent. In 1983, average elevator storage capacity jumped to over 114,000 bushels (see CHART 8), an increase of over 245 percent since 1935. Saskatchewan still has the lowest capacity per elevator (TABLE 17) and, therefore, has more room for contraction relative to other provinces.

CHART 8 TOTAL AND AVERAGE CAPACITY



Storage capacity per operating unit was 91,000 bushels in 1964, the first year for which data are available. By 1983,

average capacity per operating unit had increased to nearly 166,000 bushels, an increase of 75,000 bushels, or just over 82 percent.

TABLE 17

SPATIAL DISTRIBUTION OF PRIMARY ELEVATORS 1977-83

TABLE 17.1 - MANITOBA

YEAR*	ELEVATORS (No.)	STORAGE CAPACITY (tonnes)	AVERAGE CAPACITY (tonnes)	AVERAGE CAPACITY (bushels)**
1977	454	1,206,640	2,658	106,320
1979	417	1,777,150	4,262	170,480
1981	373	1,135,460	3,044	121,760
1983	364	1,157,440	3,180	127,200

TABLE 17.2 - SASKATCHEWAN

YEAR*	ELEVATORS (No.)	STORAGE CAPACITY (tonnes)	AVERAGE CAPACITY (tonnes)	AVERAGE CAPACITY (bushels)**
1977	2,032	4,843,630	2,384	95,360
1979	1,915	4,673,700	2,441	97,640
1981	1,704	4,395,330	2,579	103,160
1983	1,521	4,064,470	2,672	106,880

TABLE 17.3 - ALBERTA/B.C.

YEAR*	ELEVATORS (No.)	STORAGE CAPACITY (tonnes)	AVERAGE CAPACITY (tonnes)	AVERAGE CAPACITY (bushels)**
1977	1,253	3,265,810	2,606	104,240
1979	1,196	3,201,890	2,677	107,080
1981	1,056	2,975,990	2,818	112,720
1983	915	2,813,570	3,075	123,000

** Conversion factor from tonnes to bushels is 40.0 bus=1 tonne. Conversion factor is different to that used in TABLE 12 because of the variation in the proportion of the six grains which comprise the total.

* as of August 1

Source: Canadian Grain Commission, Grain Elevators in Canada

In terms of location, there were 364 elevators in Manitoba, 1521 elevators in Saskatchewan and, 915 elevators in Alberta/B.C. on August 1, 1983. In other words, approximately 55 percent of all elevators were located in Saskatchewan, 32 percent in Alberta/B.C. and 13 percent in Manitoba. This distribution is not markedly different from what it was in 1935 when 56.4 percent of all elevators were located in Saskatchewan, 30.8 percent in Alberta/B.C. and 12.8 percent in Manitoba.

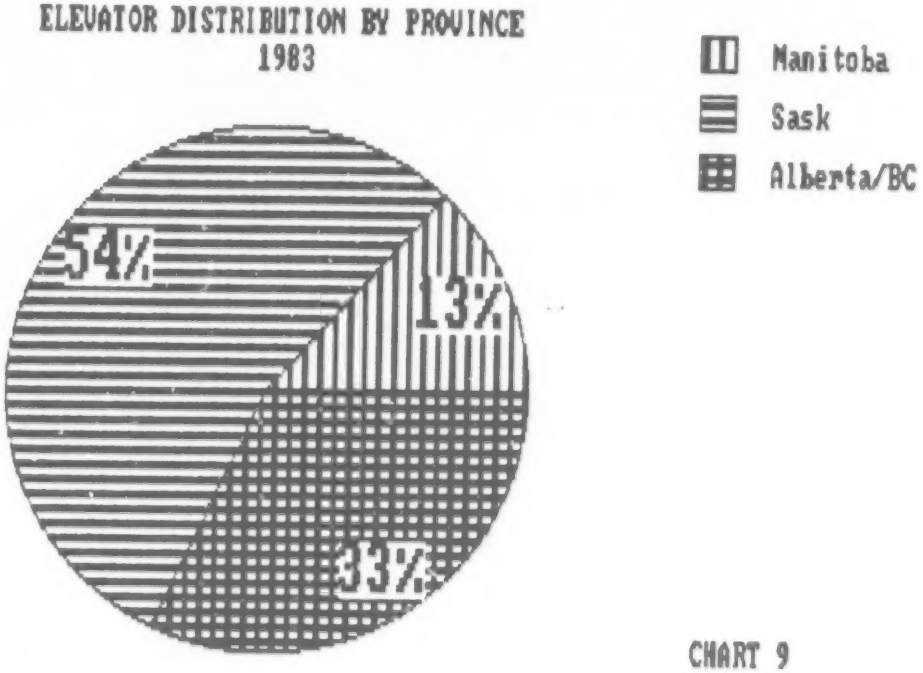


CHART 9

The upward trend in storage capacity per elevator, delivery point and operating unit combined with the continuous reduction in the number of elevators reflects the phasing out of smaller elevators, the expansion and upgrading of equipment

in existing elevators and the construction of new elevators of larger size in order to improve operating efficiency and profitability. In recent years, the attempt to secure greater operating efficiency through fewer and larger units has been the principal trend in the rationalization of the primary elevator system.

Elevator companies have become more innovative in the design and construction of elevator units. In recent times two types of elevators have been introduced. The first type, favoured by the grain co-operatives, is called the composite or double-composite elevator, depending on whether the work house has one or two annexes constructed as an integral part of the workhouse. The storage capacity of the double composites approximates 5,500 tonnes or about 200,000 bushels(43). The second type uses concrete construction and ranges from 14,000 to 28,000 tonnes capacity. Elevators of this type have been built by an independent producer-owned company at Weyburn, Saskatchewan, and by Cargill Grain Company Limited at Elm Creek, Manitoba and Rosetown, Saskatchewan (See TABLE 18). Alberta Wheat Pool's subsidiary, ABL Engineering Ltd., has developed the Buffalo Sloped Bin grain elevator but its use is not widespread.

These two types of elevator are large by primary elevator standards. To a large extent, they approach a middle ground between primary and terminal elevators. Both types differ

from conventional primary elevators in that they are highly automated, have large capacity equipment and normally have a greater storage capacity as illustrated in TABLE 18. They differ from terminals in that they are lower cost facilities and are geared to receive deliveries directly from the farm(44). As well they have full cleaning, drying and other service facilities.

Alberta Wheat Pool has stated(45) that all of its new country elevators are designed for high throughput. Each new elevator is now equipped with a 24 meter, 60 tonne capacity truck receiving scale and with grain handling equipment rated at 170 tonnes per hour(46). The Pool's minimum spot at new elevators is 15 cars. This trend in new elevator construction is not unique to Alberta Wheat Pool. Saskatchewan Wheat Pool has indicated that its facilities are being developed to accomodate normal handling of 25,000 to 50,000 tonnes of grain and, to date, elevators at almost 300 locations have been constructed or upgraded to high-throughput standards to meet these objectives(47).

TABLE 18

LARGEST ELEVATORS BY SIZE, COMPANY AND LOCATION

ELEVATOR COMPANY	ELEVATORS (No.)	CAPACITY (tonnes)	LOCATION
Parrish & Heimbecker	1	46,480	Moose Jaw, Saskatchewan
	1	31,390	Saskatoon, Saskatchewan
	1	22,400	Winnipeg, Manitoba
	1	11,030	Lethbridge, Alberta
Alberta Terminals Ltd.	1	35,000	Lethbridge, Alberta
Weyburn Inland Terminals	1	24,980	Weyburn, Saskatchewan
Cargill Limited	1	18,280	Elm Creek, Manitoba
	1	12,880	Rosetown, Saskatchewan
Maple Leaf Mills-Masterfeed	1	15,060	Winnipeg, Manitoba
Alberta Wheat Pool	1	10,220	Dawson Creek, B.C.
Pioner Grain Company	1	10,220	Biggar, Saskatchewan
	1	10,220	Carrot River, Sask.
	1	9,240	Foam Lake, Sask.
	1	8,150	Weyburn, Sask.
United Grain Growers	1	10,080	Dawson Creek, B.C.
Saskatchewan Wheat Pool	1	7,180	Lashburn, Sask.
Manitoba Pool Elevators	1	6,240	Gladstone, Manitoba

Source: Canadian Grain Commission, Grain Elevators in Canada

Other companies have indicated[48] that the trend towards larger, highly automated elevators will continue. Efficient elevator units are required to achieve the level of throughput which is consistent with the operation of a profitable enterprise. Older, less efficient units are unable to accomodate and put through the volumes of grain that are being produced on the prairies. According to Cargill, "the rationalization which has been occurring and will continue to occur in the elevator system is a necessary measure if (they) ... are to keep costs at a reasonable level"[49].

TABLE 19 LICENSED PRIMARY ELEVATORS IN WESTERN CANADA BY FIRM, STORAGE CAPACITY AND LOCATION AS OF DECEMBER 1, 1982

LICENSED PRIMARY ELEVATOR COMPANIES IN WESTERN CANADA	MANITOBA		SASKATCHEWAN		ALBERTA		BRITISH COLUMBIA		TOTAL		AVERAGE	AVERAGE*
	Elevators	Storage Capacity (tonnes)	Elevators	Storage Capacity (tonnes)	Elevators	Storage Capacity (tonnes)	Elevators	Storage Capacity (tonnes)	Elevators	Storage Capacity (tonnes)	Capacity (tonnes)	Capacity (000 Bushels)
ALBERTA LINSEED INC.					1	4,480			1	4,480	4,480	179.2
ALBERTA TERMINALS LTD.					1	35,000			1	35,000	35,000	1400.0
ALBERTA WHEAT POOL					547	1,690,300	6	29,320	553	1,719,620	3,110	124.4
ALLSTATE GRAIN COMPANY LTS.	1	1,320							1	1,320	1,320	52.8
BALFLOUR GUTHRIE AND COMPANY					1	780			1	780	780	31.2
BORDER GRAIN CO. LTD. O/A H. RITZ CO.	1	1,200							1	1,200	1,200	48.0
CANBRA FOODS LTD.			1	1,530	1	840			2	2,370	1,185	47.4
CARGILL LIMITED	24	87,460	82	237,600	40	114,900	4	18,100	150	458,060	3,054	122.1
CONTINENTAL GRAIN CO. (CAN.) LTD.					3	11,870			3	11,870	3,957	158.3
INTER-CONTINENTAL GRAIN COMPANY	1	2,390	1	1,640					2	4,030	2,015	80.6
LINEAR AGRA (MAN.) LTD.	1	3,360							1	3,360	3,360	134.4
MAN CORN SALES (1982) LTD.	1	2,520							1	2,520	2,520	100.8
MANITOBA POOL ELEVATORS	192	604,850							192	604,850	3,150	126.0
MAPLE LEAF MILLS LTD.					1	22,400			1	22,400	22,400	896.0
MAPLE LEAF MILLS AND O/A MASTERFEEDS	1	15,060							1	15,060	15,060	602.4
McCALLISTER PEA & SEED CLEANERS LTD.	1	3,080							1	3,080	3,080	123.2
NARP PROCESSORS LTD.					1	4,200			1	4,200	4,200	168.0
OLGILVIE MILLS LTD.					1	5,710			1	5,710	5,710	228.4
PALLISER GRAIN CO. LTD.					1	1,190			1	1,190	1,190	47.6
PARRISH & HEIMBECKER, LTD.	3	27,080	18	128,720	27	83,870			48	239,670	4,993	119.7
PATERSON & SONS LTD., N.M.	33	102,810	42	126,210	2	5,730			77	234,750	3,049	122.0
PIONEER GRAIN CO., LTD.	9	30,390	259	745,780	85	237,530			353	1,013,700	2,872	114.9
REIMER SEEDS LTD.	1	600							1	600	600	24.0
SASKATCHEWAN WHEAT POOL			906	2,240,480					906	2,240,480	2,473	98.9
STOW SEED PROCESSORS LTD.	2	6,200							2	6,200	3,100	124.0
UNITED GRAIN GROWERS LTD.	89	267,160	197	550,880	191	553,190	5	22,290	482	1,393,520	2,891	115.6
WESTERN AGRI-SERVICES LTD.							1	3,780	1	3,780	3,780	151.2
WEYBURN INLAND TERMINALS LTD.			1	24,980					1	24,980	24,980	999.2
TOTAL	360	1,155,480	1,507	4,057,820	903	2,771,990	16	73,490	2,786	8,058,780	2,893	115.7

SOURCE: CGC, GRAIN ELEVATORS IN CANADA.

5.2 Primary Elevator Ownership

Contraction of the grain handling system has coincided with an even more dramatic contraction in the ownership of primary elevator facilities. In 1930, there were about 130 grain elevator companies in western Canada. About 40 of these companies operated 5 or more elevators. Today, there are approximately 28 primary elevator companies, of which only 8 operate 5 or more elevators. TABLE 19 lists licensed primary elevator companies in Western Canada.

The eight major companies have a predominant influence in the grain handling system. Together the remaining twenty companies owned only 25 of the 2,786 primary elevators in existence on December 1, 1982. Put another way, they represent less than one percent of the elevators in operation. Generally, these companies are small and tend to service a clientele which they have cultivated over many years.

There is no single reason why these companies maintain elevator units. It has been stated(50) that many of these elevators are used for storing speciality crops such as peas, beans and lentils. Even more important, many elevators are located in areas where competition does not exist and the companies which own them have other areas of interest. For example, Palliser Grain Company and Ogilvie Mills Ltd. are excellent examples of companies which maintain primary

elevators, although such activity does not fall within their primary area of interest.

Another reason for the existence of the 'fringe' units has been advanced by the National Farmers Union(51). This farm organization has contended that some companies with very few primary facilities charge rates at or near the maximum tariff on all grains. Hence, the tariff structure has been designed to accomodate their survival in the system more from a self-interest point of view than to provide competitive "least cost" service to farmers.

The major companies which dominate the grain handling system in western Canada are either investor-owned or producer-owned. Investor-owned companies trace their origin back directly or through their antecedent companies to the railway building era(52). A good example is Pioneer Grain Company which is a wholly owned subsidiary of James Richardson & Sons Limited, the oldest grain merchandising firm in Canada. In the earlier years, it operated elevators under its own name. Today, Pioneer is the primary elevator arm of the Richardson firm(53).

In more recent times, Cargill Grain Company has established itself as one of the principal owners of elevators in western Canada. In 1975, it purchased National Grain Limited which traced its origin back to the Northern Elevator Company, the

first of the line elevator companies founded in 1893(54). Two other investor-owned companies were established at the turn of the century. These were N.M. Paterson & Sons Limited which was founded in 1903 and Parrish & Heimbecker Limited in 1909. Between those pioneer days and the present, many more primary elevator companies were founded. However, they disappeared when their assets were purchased and concentrated in the hands of the currently operating investor-owned and producer-owned companies.

The oldest of the producer-owned companies is the United Grain Growers Limited whose parent company was founded in 1906. It is a joint stock company whose shares are held solely by producers(55). The other producer-owned companies are the three provincial wheat pools whose dividends are pro-rated among members on the basis of their patronage. Alberta Wheat Pool commenced operation in 1923, Saskatchewan Wheat Pool and Manitoba Pool Elevators both started in 1924.

The pools represented a producer-owned and producer-controlled alternative to the open market system for the disposal of Canadian wheat. They were the first co-operatives to aspire to this position in the Canadian grain trade. In terms of basic functions, the pools were designed to perpetuate the tradition which had been fully established in the early years of the present century, the tradition that

TABLE 20 PRIMARY ELEVATORS BY FIRM, 'OPERATING UNITS'

AND SPATIAL DISTRIBUTION AS OF DECEMBER 1, 1983

LICENSED PRIMARY ELEVATOR COMPANIES	MANITOBA		SASKATCHEWAN		ALBERTA		BRITISH COLUMBIA		TOTAL	
	Operating Units	Separate Units	Operating Units	Separate Units	Operating Units	Separate Units	Operating Units	Separate Units	Operating Units	Separate Units
ALBERTA WHEAT POOL	-	-	-	-	324	(547)	6	(6)	330	(553)
CARGILL LIMITED	22	(24)	75	(82)	35	(40)	3	(4)	135	(150)
MANITOBA POOL ELEVATORS	164	(192)	-	-	-	-	-	-	164	(192)
PARRISH & HEIMBECKER, LTD.	3	(3)	17	(18)	25	(27)	-	-	45	(48)
PATERSON & SONS LTD., N.M.	27	(33)	31	(42)	1	(2)	-	-	59	(77)
PIONEER GRAIN CO., LTD.	6	(9)	172	(259)	60	(85)	-	-	238	(353)
SASKATCHEWAN WHEAT POOL	-	-	588	(906)	-	-	-	-	588	(906)
UNITED GRAIN GROWERS LTD.	72	(89)	134	(197)	134	(191)	4	(5)	344	(482)
OTHER LICENSED COMPANIES	9	(10)	3	(3)	10	(11)	1	(1)	23	(25)
TOTAL	303	(360)	1,020	(1,507)	589	(903)	14	(16)	1,926	(2,786)

SOURCE: CANADIAN GRAIN COMMISSION, GRAIN ELEVATORS IN CANADA

N.B.: The Bracketed figures indicate the licensed separate units

co-operative organization might serve as an effective expression of the farmers' dissatisfaction with their place in the price system(56).

Producer-owned companies operated 2133 out of 2786 primary elevator units in western Canada on December 1, 1983. In other words, producer-owned companies now operate 77 percent of all primary elevator facilities in western Canada. Their strong position in the industry was solidified in 1972 when the wheat pools purchased the assets of Federal Grain Limited. Before that purchase, the producer-owned companies operated about 57 percent of the primary elevators in the system(57).

TABLE 20 indicates that only Cargill Limited and United Grain Growers operate in all the western provinces. The pools are province-specific in their primary elevator operation while other elevator companies do business in two or three provinces.

A study(58) done in 1976 has shown that producer-owned companies appear to be more aggressive in their attempt to rationalize the handling system than the private investor group. Recent data seem to substantiate this trend. For example, in the period August 1, 1973 to December 1, 1983 there was a 36.4 percent decrease in the number of primary elevators in western Canada. TABLE 21 indicates that Manitoba Pool Elevators and Saskatchewan Wheat Pool were well above the

average industry rate of closure with 40.6 percent and 40.7 percent closure rates respectively and Alberta Wheat Pool and United Grain Growers Limited were at just about the average industry rate with 34.4 percent and 36.5 percent closure rates respectively.

TABLE 21

ELEVATOR CONSOLIDATION BY FIRM

PRIMARY ELEVATOR COMPANIES	NUMBER OF ELEVATORS AS OF AUG. 1, 1973	NUMBER OF ELEVATORS AS OF DEC. 1, 1983	DECREASE	PERCENTAGE DECREASE
katchewan Wheat Pool	1,528	906	622	40.7
erta Wheat Pool	856	553	303	35.4
ted Grain Growers	759	482	277	36.5
neer Grain	449	353	96	21.4
itoba Pool Elevators	323	192	131	40.6
gill	289	150	139	48.1
terson, N.M. & Sons	92	77	15	16.3
rish & Heimbecker	56	48	8	14.3
ers	31	25	6	19.4
ALL COMPANIES	4,383	2,786	1,597	36.4

In terms of the private investor group, only Cargill Grain Company surpassed the industry's average with a 48.1 percent reduction of elevators. Others lagged far behind the average industry rate. The greater apparent aggressiveness to rationalize on the part of the co-ops and Cargill can probably be explained by a greater need. In 1975 for example, Saskatchewan Wheat Pool and Cargill were about 20% below the industry's average in terms of average capacity per elevator.

TABLE 22

OPERATING UNIT CONSOLIDATION BY FIRM

PRIMARY ELEVATOR COMPANIES	NUMBER OF OPERATING UNITS AUG. 1, 1973	NUMBER OF OPERATING UNITS DEC. 1, 1983	DECREASE	PERCENTAGE DECREASE
Saskatchewan Wheat Pool	1,026	588	438	42.7
Alberta Wheat Pool	558	330	228	40.9
United Grain Growers	533	344	189	35.5
Pioneer Grain	339	238	101	29.8
Manitoba Pool Elevators	239	164	75	31.4
Cargill	222	135	87	39.2
Patterson, N.M. & Sons	79	59	20	25.3
Parrish & Heimbecker	51	45	6	11.8
Others	26	23	3	11.5
ALL COMPANIES	3,073	1,926	1,147	37.3

Source: Canadian Grain Commission, Grain Elevators in Canada

In terms of manager units, the producer-owned companies have consolidated much faster in the last ten years than the private trade. Together, the grain co-operatives reduced their manager operating units by over 37 percent with Saskatchewan Wheat Pool leading the way with a reduction of 42.7 percent between August 1, 1973 and December 1, 1983. The private investor group, with the exception of Cargill, reduced their manager operating units at a much slower pace. TABLES 21 and 22 do indicate, however, that elevator companies are consolidating their primary elevator and operating units at almost identical rates.

One reason why the producer-owned companies have been closing elevators faster than the private trade is that the Pools may have had the largest number of small, older, uneconomic units.

Or, it may be because the Pools are far larger entities than the privately run companies. Hence, the relative importance of closures upon their total corporate revenue is reduced.

Saskatchewan Wheat Pool has indicated that the main motivation for its initiative as it relates to primary elevator closures is to put in place a system which is efficient and provides the necessary service at least cost to the producer. In arriving at the decision to close, the Pool is convinced that economic factors are important, but social, political and cultural considerations also impact on the decision. While factors other than economic ones have influenced system configuration it is beyond the scope of this report to treat them in a comprehensive way.

5.3 Rationalization and Competition

The Grains Group in its 1979 study of the Grain Handling and Transportation system indicated that in the years ahead when much more consolidation will be taking place, competition at individual delivery points will probably be decreased(59). So far, however, there has not been a decrease in competition at delivery points, although subtantial rationalization of the grain handling system has occurred. TABLE 23 indicates that the proportion of elevators where competition exists has remained almost the same since August 1, 1976.

TABLE 23

PRIMARY ELEVATOR COMPETITION (1976-1983)

YEAR*	DELIVERY POINTS (No.)	SINGLE COMPANY POINTS (No.)	MULTI-COMPANY POINTS (No.)	COMPETITIVE DELIVERY POINTS (%)
1976	1,495	811	684	45.8
1977	1,417	761	656	46.3
1978	1,394	740	654	46.9
1979	1,351	715	636	47.0
1980	1,295	700	595	45.1
1981	1,246	678	568	45.6
1982	1,217	669	548	45.0
1983	1,181	641	540	45.7

* as of Aug. 1

Source: Canadian Grain Commission, Grain Elevators in Canada

A noticeable trend, however, is the relatively rapid decline in the number of grain delivery points having 3 or more companies. TABLE 24 illustrates that between 1979 and 1983, the number of single company points fell from 708 to 637, a reduction of 71 or 10 percent; the number of two company points fell from 453 to 402, a reduction of 51 or 11.3 percent. In contrast, the number of three company points fell from 145 to 115, a reduction of 30 or 20.6 percent and the number of four company points declined from 31 to 19, a reduction of 12 or 38.7 percent. It is clear that the system is dominated by one and two company points and all the low volume three or more company points are being rapidly phased out (SEE TABLE 25).

TABLE 24

DISTRIBUTION OF COMPANIES AT DELIVERY POINTS

YEAR	No. OF ELEVATORS	No. OF COMPANIES PER DELIVERY POINT					No. OF DELIVERY POINTS
		1	2	3	4	> 4	
1979-80	3,528	708	453	145	31	3	1,340
1980-81	3,324	695	433	134	24	2	1,288
1981-82	3,133	684	412	125	23	2	1,246
1982-83	2,134	657	412	116	22	2	1,209
1983-84	2,800	637	402	115	19	2	1,175

Source: Canadian Grain Commission

Note: Delivery points do not include those points other than primary.

In 1983, as CHART 10 and TABLE 25 show, of the total number of grain delivery points, 778 or 65.9 percent received 29,999 tonnes or less, and 592 of these delivery points had only one company while 174 had two companies. Hence, a predominant number of grain delivery points have relatively small receipts and are dominated by one and two company operation. On the other hand, most of the three and four company points have receipts in excess of 30,000 tonnes. Even more important, the large volume points are increasing. For example, in 1971 there were only 15 three or more company points with receipts of more than 50,000 tonnes. In 1983, there were 58 such points.

CHART 10 DELIVERY POINTS BY RECEIPTS 1982

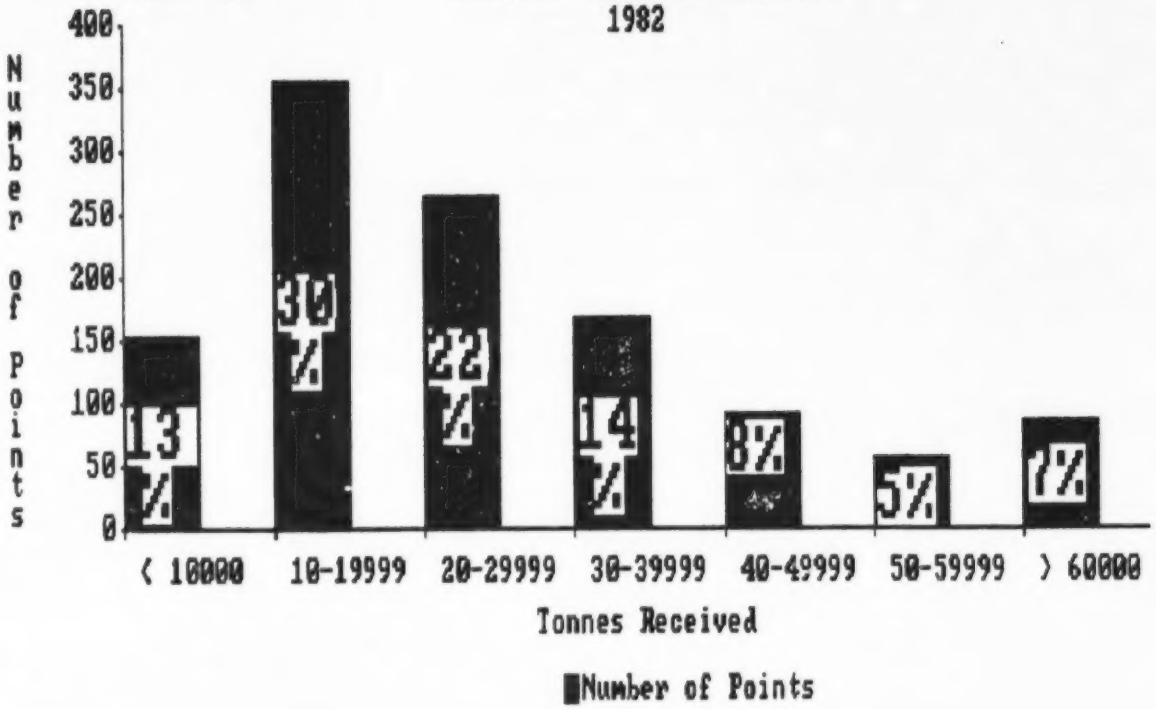


TABLE 25

VOLUME OF GRAIN RECEIVED AT PRIMARY DELIVERY POINTS - 1982-83

VOLUME RECEIVED (tonnes)	DELIVERY POINTS	No. OF COMPANIES AT DELIVERY POINTS 1	2	3	4	>4
Less than 10,000	154	152	2	-	-	-
10,000 - 19,999	358	314	43	1	-	-
20,000 - 29,999	266	126	129	11	-	-
30,000 - 39,999	168	37	110	20	1	-
40,000 - 49,999	93	6	59	27	1	-
50,000 - 59,999	57	1	31	24	1	-
Over 60,000	88	-	30	41	15	2
TOTAL	1,184	636	404	124	18	2

Source: Canadian Grain Commission

The important question here, however, is whether the competitive nature of the current system is compatible with cost effectiveness and efficiency? The Hall Commission report noted that "competition at all delivery points is neither

essential nor economical. Competition between delivery points will accomplish the same ends at a much lower cost"(60). In order to achieve cost reduction and efficiency in the handling system, the Palliser Wheat Growers Association noted that "measures such as reflecting real elevator costs at individual points, variable tariff rates, incentive rates for grain hauling and rail allocation"(61) are essential ingredients for competition.

The percentage of competitive delivery points, i.e. points with more than one company, has remained relatively stable over the years because it is widely felt that these points tend to receive more grain cars and offer better service. Farmers often perceive that they receive better grades and lower dockage at these locations(62). In addition, elevator managers are conscious of the fact that, in the absence of price competition, other incentives have to be made available to grain producers to encourage them to deliver grain to their elevator e.g. trucking premiums.

Another factor which has kept the level of competition at grain delivery points fairly constant is the relatively rapid reduction of 0-4000 tonne elevators at both single company and multi-company points. For example, all the producer-owned companies have been reducing their small elevators at a rapid rate. TABLE 26 shows that in the period August 1, 1975 to August 1, 1983 there has been a reduction of approximately 50 percent in 0-2000 tonnes elevators at both single and multi-company points.

TABLE 26 - CLASSIFICATION OF PRIMARY ELEVATORS BY COMPANY, SIZE, NATURE OF COMPETITION, AUG. 1, 1983 AND AUG. 1, 1975

Multi-Company Points, 1983

	SASKATCHEWAN POOL			ALBERTA POOL			MANITOBA POOL			U.G.G.			PIONEER			CARGILL			PARRISH & HEIM			PATTERSON, N.M. & SON		
TONNES	NO.	CAP	AVER.	NO.	CAP	AVER.	NO.	CAP	AVER.	NO.	CAP	AVER.	NO.	CAP	AVER.	NO.	CAP	AVER.	NO.	CAP	AVER.	NO.	CAP	AVER.
0-2000	253	339,750	1343	87	111,980	1287	23	29,270	1273	44	57,430	1305	25	34,360	1374	8	10,470	1309	2	3,850	1925	6	10,220	1703
2001-4000	176	486,200	2763	124	341,145	2751	60	170,350	2839	39	106,680	2735	24	54,060	2253	6	17,960	2993	3	5,150	1717	11	33,830	3075
4001-6000	29	134,610	4642	38	177,010	4658	22	101,360	4607	2	10,010	5005	0	0	0	1	5,180	5180	0	0	0	1	5,290	5290
6001-8000	1	6,810	6810	4	24,800	6200	0	0	0	0	0	0	2	12,960	6480	1	6,480	6480	0	0	0	0	0	0
SUB-TOTAL	459	967,370	2108	253	654,935	2589	105	300,980	2866	85	174,120	2048	51	101,380	1988	16	40,090	2505	5	9,000	1800	18	49,340	2741
MULTI-COMPANY POINTS																								
0-2000	119	165,206	1388	47	70,530	1501	14	19,810	1415	101	137,780	1364	67	100,720	1503	30	45,070	1502	5	7,940	1588	7	11,330	1619
2001-4000	274	800,574	2922	135	398,055	2949	39	119,170	3056	203	559,145	2754	179	504,095	2816	84	238,720	2842	31	91,330	2946	39	113,580	2912
4001-6000	62	285,070	4598	110	531,380	4831	33	152,980	4636	78	409,885	5255	40	205,305	5133	17	87,450	5144	2	10,330	5165	12	51,320	4277
6001-8000	5	33,110	6622	9	59,360	6596	2	13,110	6555	13	84,060	6466	11	71,260	6478	2	14,630	7315	0	0	0	1	6,530	6530
> 8000	0	0	0	1	10,220	10220	0	0	0	2	19,330	9665	3	29,680	9893	2	31,160	15580	5	119,700	23,940	0	0	0
SUB-TOTAL	460	1,283,960	2791	302	1,069,545	3542	88	305,070	3467	397	1,210,200	3048	302	911,060	3017	135	417,030	3089	43	238,300	5542	59	182,760	3098
TOTAL	919	2,251,330	2450	555	1,724,480	3107	193	606,050	3140	482	1,384,320	2872	353	1,012,440	2868	151	457,120	3027	48	247,300	5152	77	232,100	3014
SINGLE COMPANY POINTS, AUG. 1975																								
0-2000	525	658,150	1254	228	309,070	1356	75	97,290	1297	100	123,300	1233	21	25,160	1198	32	44,930	1404	9	12,380	1376	10	12,710	1271
2001-4000	214	554,480	2591	140	371,470	2653	76	206,270	2714	45	112,720	2505	9	23,870	2652	5	12,770	2554	2	5,180	2590	13	35,150	2704
4001-6000	20	92,800	4640	15	67,080	4472	12	54,760	4563	3	12,890	4297	0	0	0	0	0	0	0	0	0	0	0	0
6001-8000	0	0	0	0	0	0	0	0	0	0	0	0	1	6,020	6020	0	0	0	0	0	0	0	0	0
SUB-TOTAL	759	1,305,430	1719	383	747,620	1952	163	358,320	2198	148	248,910	1682	31	55,050	1776	37	57,700	1559	11	17,560	1596	23	47,860	2081
MULTI-COMPANY POINTS																								
0-2000	197	288,050	1462	77	118,150	1534	45	59,320	1318	193	268,150	1389	133	181,780	1367	96	136,940	1426	14	19,960	1426	9	15,160	1684
2001-4000	420	1,173,880	2795	246	720,390	2928	57	161,670	2836	297	838,070	2822	225	629,210	2796	123	330,980	2690	35	93,410	2669	49	141,600	2890
4001-6000	56	256,330	4577	96	446,730	4653	30	138,780	4626	64	298,690	4667	39	182,060	4668	10	45,100	4510	2	9,910	4955	9	39,390	4377
6001-8000	4	28,950	7238	5	33,250	6650	3	21,030	7010	11	74,570	6779	11	69,670	6334	0	0	0	1	6,640	6640	0	0	0
> 8000	0	0	0	0	0	0	0	0	0	0	0	0	2	20,440	10220	0	0	0	4	108,780	27,195	0	0	0
SUB-TOTAL	677	1,747,210	2581	424	1,318,520	3110	135	380,800	2821	565	1,479,480	2619	410	1,083,160	2642	229	513,020	2240	56	238,700	4263	67	196,150	2928
TOTAL	1436	3,052,640	2126	807	2,066,140	2560	298	739,120	2480	713	1,728,390	2424	441	1,138,210	2581	266	570,720	2146	67	256,260	3825	90	244,010	2711

SOURCE: CGC, GRAIN ELEVATORS IN CANADA

In specific terms, Saskatchewan Wheat Pool has reduced its 0-2000 tonne elevators at single company points by 51 percent and its 2000-4000 tonne elevators by 17 percent. The company has reduced the number of 0-2000 and 2000-4000 tonne elevators at competitive points by 39 percent and 34 percent respectively. A similar trend has been observed for the other Wheat Pools, United Grain Growers Limited and the private trade, except Pioneer Grain. Pioneer has increased the number of 0-2000 tonne elevators at single company points by 19 percent and its 2000-4000 tonne elevators by over 100 percent. However, at competitive delivery points, Pioneer has reduced the same size elevators by 50 percent and 20.4 percent respectively.

The eight major companies, according to TABLE 26, are all building large elevators at both single company and multi-company points. It is quite obvious that the number of 4000-6000 tonne elevators is increasing but the overwhelming number of elevators are in the 0-4000 tonne range. A good many small elevators remain in operation because they were built in the 1930s and 1940s and are now fully depreciated. As well, they facilitate grain storage by supplementing the storage capability of more modern and efficient units and thus serve to enhance handling performance.

5.4 Handling Performance

It is very difficult to address the area of handling performance in the primary elevator system without reference to the broader question of overall grain handling and transportation system efficiency. However, a study of overall system efficiency is beyond the limit of this report. Total system efficiency studies would normally focus attention on what the grain handling system could or should be, given the various cost components in grain handling and transportation.

Handling performance of primary elevators is typically assessed in terms of turnover ratios, that is, the ratio of receipts or shipments to storage capacity. The question, therefore, is how does rationalization improve handling efficiency? The answer is simple. With fewer delivery points and fewer elevators, those that remain will handle more grain at a lower average cost per tonne.

A study[63] of elevator costs conducted at the University of Manitoba has identified the annual volume of grain handled by an elevator and its size as two of the major factors affecting costs. For example, if an elevator handles 100,000 bushels of grain in a particular year and has a capacity of 50,000 bushels, then its handling-to-capacity ratio, or turnover ratio, is (100,000/50,000) or 2:1.

If the same elevator had handled 150,000 bushels that year its handling-to-capacity ratio would have been 3:1. As TABLE 27 shows, a 50,000 bushel capacity elevator operating at a handling-to-capacity ratio of 6:1 (300,000 bushels), handled a bushel of grain for only 8¢ compared with 24¢ for an elevator of the same capacity operated at 1:1 (50,000 bushels).

TABLE 27

ELEVATOR COSTS PER BUSHEL OF GRAIN HANDLED FOR ELEVATORS OF DIFFERENT CAPACITIES

TURNOVER RATIOS	50,000	100,000	250,000	BUSHELS
		- CENTS PER BUSHEL -		
1:1	24	21	18	
2:1	16	14	12	
3:1	15	11	10	
4:1	11	9	8	
5:1	9	3	7	
6:1	8	7	6	

Elevator costs normally decrease as elevator size increases, if the handling to capacity ratio remains constant. For example, a 100,000 bushel elevator can handle grain for 21¢ per bushel compared to 24¢ for a 50,000 bushel elevator, assuming that the handling to capacity ratio for both are 1:1.

Ever since the mid-sixties, elevator companies have placed a good deal of emphasis on the throughput capability of their facilities. With larger and more modern elevators, relative to earlier periods, companies have been able to improve their turnover ratios significantly. TABLE 28 and CHARTS 11 and 12

indicate that substantial improvement has occurred in turnover ratios since 1976. Turnover ratios fluctuated throughout the period but by the 1982 crop year elevators were experiencing an average of about four turns on a system-wide basis compared to over two in 1976. A turnover ratio of between 4 and 6 is considered to be in the most profitable range of operation for a primary elevator(64).

CHART 11 AVERAGE RECEIPTS

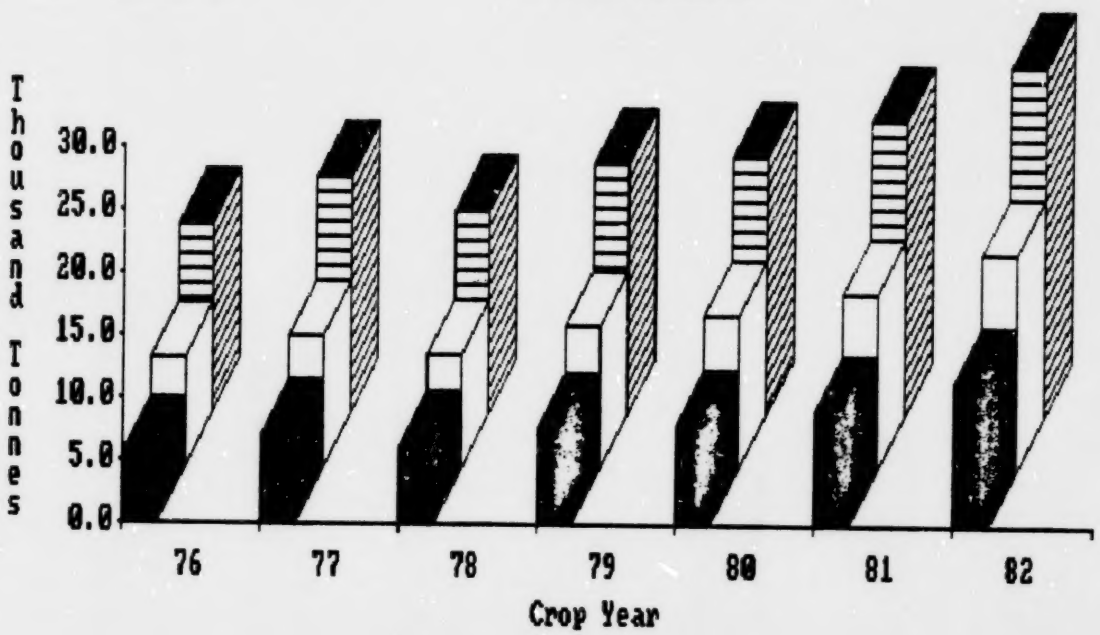


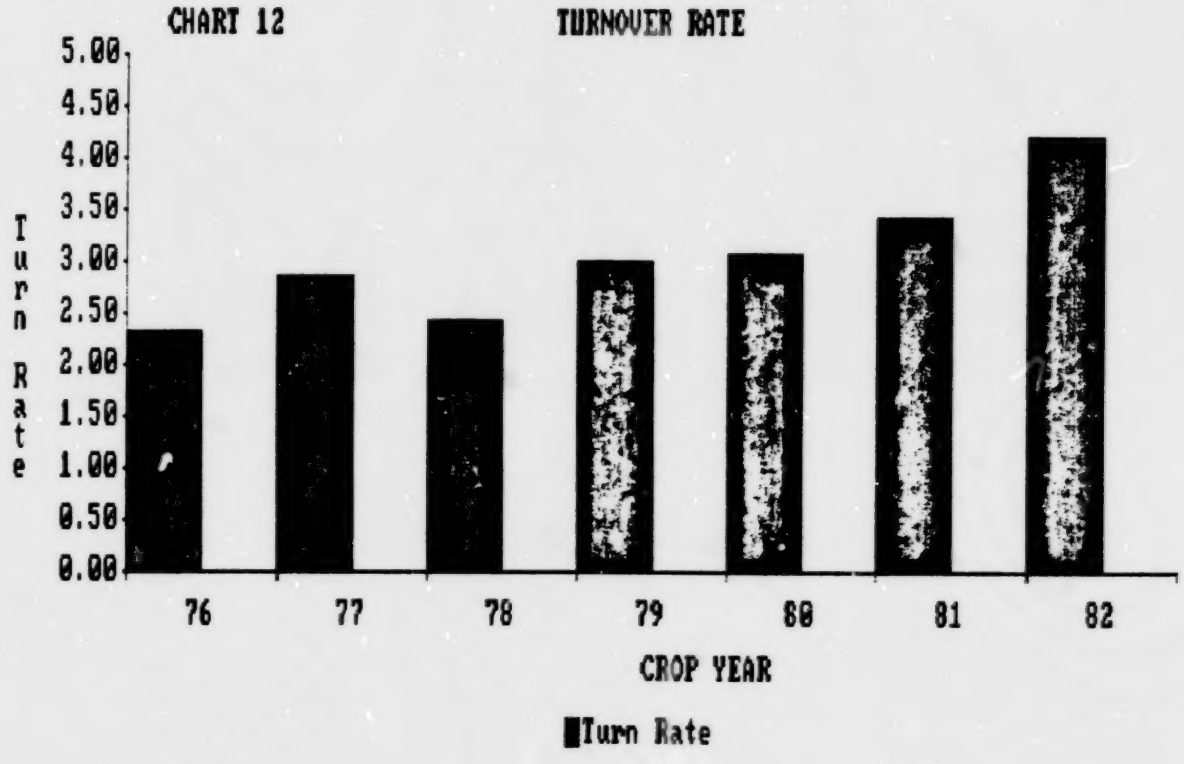
TABLE 28

TOTAL AND AVERAGE PRIMARY ELEVATOR RECEIPTS OF SIX MAJOR GRAINS AND TURNOVER RATIOS 1976-77 TO 1982-83

CROP YEAR	TOTAL PRIMARY RECEIPTS OF MAJOR GRAINS	AVERAGE RECEIPTS PER ELEVATOR	AVERAGE RECEIPTS PER OPERATING UNIT	AVERAGE RECEIPTS PER DELIVERY POINT	AVERAGE TURNOVER
			- tonnes -		
1976-77	22 638 105	5 711	8 892	15 143	2.35
1977-78	26 760 843	7 157	10 848	18 886	2.87
1978-79	22 607 613	6 180	9 265	16 218	2.45
1979-80	27 336 901	7 749	11 505	20 235	3.02
1980-81	27 039 086	8 135	12 507	20 880	3.09
1981-82	29 396 375	9 383	14 167	23 593	3.46
1982-83	34 310 690	11 694	17 373	28 193	4.22

Source: Canadian Grain Commission

CHART 12



It has been alleged that an important factor impeding improved handling efficiency is the application of the tariff. In fact, at the Canadian Grain Commission tariff hearings on April 5, 1984, several groups complained about the way in which companies apply the tariff. For example, the National Farmers Union noted that "it is evident that for the most part elevator companies do not, within each province, vary the elevation rates they apply between their various delivery points. Therefore the rate structure is not applied to shape the system to the configuration having the best balance between efficiency and service"(65).

A similar view was echoed by the Palliser Wheat Growers Association who contended that "the current practice of non-competitive tariff pricing between companies and points provides no benefit to producers hauling to high volume points. They are, in fact, penalized by supporting the costs which low volume points incur. ... allocation of tariff revenues, again to low volume points, diverts badly needed capital from these (high volume) areas"(66). There may well be some validity to this claim in the sense that there are still more than 321 delivery points which handled less than 10,000 tonnes per year over a ten year average, while 250 points out of 1181 gathered half of all the grain on the prairies(67).

Grain companies generally charge uniform elevator rates for Board grains at elevators. TABLE 29 is illustrative of this fact. Non-price competition has occurred because the maximum tariffs, established by the Canadian Grain Commission, are usually set just high enough to cover system-wide costs of all elevators. This means that profits from efficient elevators are used to cover the costs of less efficient ones. It has been stated that the reluctance to compete in price occurs as well because of the overall low level of profitability in the primary elevator system and the cross-subsidization which occurs between primary and terminal facilities(68).

TABLE 29

PRIMARY ELEVATOR TARIFF RATES, 1983-84

	WHEAT	OATS	BARLEY	RYE	FLAX SEED	RAPE-SEED
	- dollars per tonne -					
MAXIMUM TARIFFS	7.96	13.06	9.87	8.36	12.52	12.73
Alberta						
Alta. Wheat Pool	6.25	9.40	7.80	6.25	8.40	8.40
Cargill Ltd.	5.90	8.82	7.38	7.96	11.92	12.12
Parrish & Heimbecker	5.85	8.80	7.35	5.70	7.70	7.60
N.M. Paterson	6.03	8.79	7.37	6.65	8.90	8.90
Pioneer Grain	6.25	9.21	7.77	6.54	7.93	7.93
U.G.G.	6.09	8.97	7.46	6.55	9.20	9.20
Saskatchewan						
Sask. Wheat Pool	6.27	9.06	7.57	6.22	9.04	9.04
Cargill Ltd.	5.93	8.64	7.17	7.96	11.92	12.12
Parrish & Heimbecker	5.91	8.64	7.22	5.93	8.41	8.34
N.M. Patterson	6.28	8.64	7.21	6.23	8.90	8.90
Pioneer Grain	6.28	9.06	7.57	6.54	7.93	7.93
U.G.G.	6.12	8.82	7.26	6.55	9.20	9.20
Manitoba						
Man. Pool Elevators	7.35	10.84	9.06	7.89	9.38	9.38
Cargill Ltd.	6.99	10.43	8.66	7.96	11.92	12.12
Parrish & Heimbecker	6.98	10.40	8.72	7.55	8.82	8.82
N.M. Patterson	7.21	10.43	8.75	7.62	8.90	8.90
Pioneer Grain	7.36	10.84	9.06	6.67	8.09	8.09
U.G.G.	7.05	10.35	8.56	7.21	9.20	9.20

Source: Canadian Grain Commission

In order to address this problem and promote a more efficient handling system, the Booz-Allen report has advocated that "more variable tariffs are therefore desirable and probably necessary to encourage investment in the primary elevator system. Variable tariffs would tend to accelerate the pace of consolidation and the replacement of obsolete primary elevators with newer, more efficient facilities"(69). The report further stated that producers would be attracted to these more efficient facilities by lower elevator charges which should offset the higher costs of trucking grain. In essence, lower elevator rates would reflect only the improvements in elevator efficiency, but there would also be decreases in railway costs as the number of delivery points served decreased.

5.5 Branchline Abandonment

Branchline abandonment did not become a serious issue until 1961 when the railways decided to pursue this avenue as an effective means of cost control. The branchline network was costly to maintain and questions were raised about the continued existence of all the lines. Section 252 of the Railway Act defines a 'branchline' as "a line of railway in Canada that is subject to the jurisdiction of Parliament that, relative to a main line within the company's railway system in Canada of which it forms a part, is a subsidiary, secondary, local or feeder line of railway, and includes a part of any such subsidiary, secondary, local or feeder line or

railway"[70]. In 1935, there were over 19,000 miles of main and branchlines in Western Canada.

Given the extensive nature of the rail branchline network, some of these lines became candidates for abandonment. In 1963 a moratorium on branchline abandonments came into effect. While some branchlines had already been abandoned, government branchline subsidies paid out from the early 1970s enabled the railways to continue operating many of the lines, despite a failure to upgrade or maintain them[71]. This implied a growing deterioration in their condition and the need for more drastic measures later.

In 1974 the federal government announced that a basic prairie rail network of 12,414 miles would be guaranteed until the year 2000. An additional 6,322 miles of rail branchlines were referred to the Hall Commission for evaluation and recommendation. The Hall Commission recommended the abandonment of 2,165 miles of rail line, the addition of 1,812 miles to the basic network and the transfer of 2,344 miles to a Prairie Rail Authority (PRA) which the Commission recommended be established[72]. The objective in delegating responsibility to the PRA was to allow PRA the authority to dispose of these lines over a period of twenty five years.

TABLE 30

RAIL MILEAGE AND HALL RECOMMENDATIONS BY PROVINCE

RAIL LINE CATEGORY	CNR (Mi.)	CPR (Mi.)	NAR (Mi.)	TOTAL (Mi.)	PERCENT OF PROV-INCIAL TOTAL %
Province of Manitoba					
Basic Network, Guaranteed till 2000	1,996.5	1,151.8	-	3,148.3	69.2
Recommended to be added to Basic Network	118.5	49.0	-	167.5	3.7
Recommended to be transferred to P.R.A.	464.5	136.2	-	600.7	13.2
Recommended to be abandoned	429.6	203.3	-	632.9	13.9
PROVINCIAL TOTAL	3,009.1	1,540.3	-	4,549.4	100.0
Province of Saskatchewan					
Basic Network, Guaranteed till 2000	1,865.2	3,101.5	-	4,966.7	59.0
Recommended to be added to Basic Network	763.4	281.8	-	1,045.2	12.4
Recommended to be transferred to P.R.A.	755.1	525.0	-	1,280.1	15.2
Recommended to be abandoned	727.5	394.7	-	1,122.2	12.4
PROVINCIAL TOTAL	4,111.2	4,303.0	-	8,414.2	100.0
Province of Alberta					
Basic Network, Guaranteed till 2000 ,	1,924.8	1,563.3	811.2	4,299.3	74.5
Recommended to be added to Basic Network	242.0	273.3	84.6	599.9	10.4
Recommended to be transferred to P.R.A.	231.9	230.9	-	462.8	8.0
Recommended to be abandoned	150.0	260.4	-	410.4	7.1
PROVINCIAL TOTAL	2,548.7	2,327.9	895.8	5,772.4	100.0
Prairie Provinces					
Basic Network, Guaranteed till 2000	5,786.5	5,816.5	811.2	12,414.3	66.2
Recommended to be added to Basic Network	1,123.9	604.1	84.5	1,812.6	9.7
Recommended to be transferred to P.R.A.	1,451.5	892.1	-	2,343.6*	12.5
Recommended to be abandoned	1,307.1	858.4	-	2,165.5	11.6
SYSTEM TOTAL	9,669.0	8,171.2	895.8	18,736.0	100.0

* This includes 22.4 miles of new construction

Source: Hall Commission Report (1977)

The federal government did not create the PRA. Instead it decided to establish the Prairie Rail Action Committee (PRAC) to evaluate the PRA concept and make further suggestions

regarding the disposition of the lines assigned by the Hall Commission to the PRA. The PRAC decided against establishment of the PRA and it recommended further abandonment of 1,498 miles of branch lines and the retention of 1,046 miles to the year 2000. However, final decisions regarding abandonment were made by the Canadian Transport Commission (CTC) which conducts its own public hearings and evaluations. For the most part the recommendations made by the CTC follow those of the Hall Commission and the PRAC(73).

Approximately 3,476 miles of line have been added to the basic network since 1975 as a result of the Hall Commission, the Prairie Rail Action Committee, the Neil Report and various CTC decisions. An updated status report(74) on the prairie rail system released by the CTC December 31, 1983 shows that the basic network guaranteed to the year 2000 consisted of 15,890 miles of track. In the period 1980-83, the CTC conducted abandonment hearings involving 47 subdivisions covering 1404 miles of prairie branchlines. It ordered abandonment of 1179 miles and the retention of 166 miles(75).

The rail line abandonments resulting from the implementation of the recommendations of the Hall Commission and the Prairie Rail Action Committee have also contributed to the consolidation of the primary elevator system in western Canada. There were about 200 licensed primary elevators and 110 delivery points on the lines recommended by PRAC to be

abandoned(75). Most of these elevators were either closed or relocated. Precise data on the number of closures as a result of branchline abandonment are unavailable. However, discussions with industry representatives(77) reveal that a good many closures have occured because of abandonments.

The elimination of parts of the prairie branchline network has had two significant effects on the primary elevator system. First, it has been suggested that branchline abandonment fosters greater efficiency in the system since the average cost of handling and storing grain at the country elevators decreases. By closing some delivery points and increasing receipts at others, throughput ratios rise, grain is stored for shorter periods of time and, consequently, average fixed costs fall(78).

Secondly, industry representatives have expressed concern about the uncertainty of the current branchline network. They express the view that although the network is protected until the year 2000, their investment decisions on new elevators require a period of approximately 25 years for full depreciation. There is some apprehension about building elevators alongside branch lines which may be abandoned after the year 2000. Given the cost of new elevator construction, this uncertainty might serve to impede the construction of newer, more efficient facilities. Alberta Wheat Pool has stated that the selection of elevator points is becoming

increasingly important, but the uncertainty of rail abandonment and rehabilitation compounds the problem(79).

5.6 Primary Elevator Costs and Revenues

Cost factors continue to have a significant impact on primary elevator operations. According to the United Grain Growers, economic factors such as interest rates and increased operating and fixed costs continue to guide the consolidation of the primary elevator system(80). The company indicated that it spent $14 million or 35 percent of its expenditure budget on new elevator construction in 1982-83.

The cost of a new composite elevator with 3,500 tonnes (140,000 bushels) capacity now exceeds $1 million. To do a major overhaul of an existing elevator, including a new driveway, scale and offices costs as much as $350,000. Development costs in a new market are as much as $1.75 million for farm supply facilities, land, trackage and new grain handling facilities(81).

Alberta Wheat Pool in its brief(82) to the Canadian Grain Commission (CGC) noted that inflation has had a significant impact on its country operations. It indicated that approximately 90 percent of its elevator expenses are fixed costs and construction activity has exacted a heavy price on its operations. For example, in order to construct a 10,220 tonne elevator at Dawson Creek in 1983-84, the company had to expend $436 per tonne on structural costs and $110 per tonne

in equipment costs compared with $270 per tonne in structural costs and $68 per tonne in equipment costs to construct the identical size elevator in 1978.

Saskatchewan Wheat Pool has also noted that escalation in costs of operation is forcing the company to consolidate its operations. The co-operative indicated that in an attempt to prevent a significant escalation of costs of the country handling system and to improve efficiency at the remaining facilities, it has closed 621 country elevators at 219 stations during the past ten years(83). The company further noted that while the primary elevator system has become relatively more efficient, the cost to operate the system has increased by 54 percent since 1978. Elevation tariffs, by comparison, have risen only 37 percent during the past five years.

TABLE 31

PRIMARY ELEVATOR CONSTRUCTION COSTS

	1978 COST ($)	1983 COST ($)	INCREASE (%)
PRIMARY ELEVATORS			
2800 Tonne Elevator	670,000	900,000	34
2800 Tonne Annex	260,000	350,000	35
Cleaners	13,400	34,000	154
Receiving Scale	11,000	17,000	55
Trackage (Per Foot)	45	79	76

Source: Saskatchewan Wheat Pool Submission to the CGC, April, 1984

The major sources of revenue at the primary elevator level lagged far behind the rate of cost increases. The dramatic jump in the storage tariff had little impact on industry revenue since storage accounts for less than 20 percent of total handling charges. TABLE 32 is indicative of the trend between 1978 and 1982. In the absence of revenue from sales of farm supplies and significant cross-subsidization from terminal facilities most country operations would be in financial difficulty.

TABLE 32

SASKATCHEWAN WHEAT POOL
COMPARISON OF TARIFFS, EXPENSES AND OPERATING STATISTICS

PRIMARY ELEVATORS	1978-79	1982-83	% Increase
a) Tariffs - Aug. 1			
- elevation	4.50/t	6.18/t	37.3
- dockage removal	.92	1.06	15.2
- storage	.013	.022	69.2
b) Expenses ($000)			
- operating	$41,973	$ 64,373	53.4
- administrative	23,964	37,090	54.8
TOTAL	$65,935	$101,463	53.9
c) Receipts (000 tonnes)	7,690	11,815	53.6

Source: Saskatchewan Wheat Pool's Submission to CGC Tariff Hearings, April, 1984.

TABLE 33 shows that net earnings for country elevators have fluctuated considerably over the past eight years. Only the producer-owned companies are identified in this table. Nevertheless, it gives a good indication of the trend in the industry. Of the four companies listed, Manitoba Pool Elevators seemed to have suffered the most significant impact on its net earnings.

TABLE 33

NET EARNINGS FOR COUNTRY OPERATIONS 1975-1982

YEAR	SASKATCHEWAN WHEAT POOL	MANITOBA POOL ELEVATORS	ALBERTA WHEAT POOL	UNITED GRAIN GROWERS LTD.
		($M)		
1975	11.8	6.3	n.a.	2.6
1976	3.8	(.6)	n.a.	1.1
1977	12.4	.07	n.a.	1.3
1978	9.4	3.8	n.a.	3.0
1979	9.4	(2.3)	n.a.	6.4
1980	18.2	5.8	n.a.	9.2
1981	28.4	3.4	12.5	7.6
1982	26.5	9.1	11.3	4.5

Source: Annual Financial Reports, 1975-1983
( ) Negative earnings

Since the major companies are involved in other economic activities beside country elevator operation they have been able to absorb the impact of fluctuating earnings. This does not imply that elevator companies are not particularly concerned about the financial health of their country operations, rather they are better able to address this problem because of their investment mix.

CHAPTER 6

Future Trends

Primary elevator rationalization which began around the mid-1930s has continued to this point in time and there is no reason to believe that this process of consolidation will not continue in the future. As Cargill Limited indicated, "the rationalization which has been occurring and will continue to occur in the elevator system is a necessary measure if we, as an industry, are to keep those costs at a reasonable level"(84). Costs are indeed a major factor in this process but they are not the only one.

The relatively rapid decline in the number of elevators, delivery points and operating units has occurred in a period when the old Crow rate was in effect and in the absence of variable tariffs. Under the old Crow rate regime, producers paid below-cost freight rates to move their grain. With the new Western Grain Transportation Act (WGTA), freight costs to producers will gradually increase. Increasing freight rates may induce producers to truck their grain longer distances and utilize more efficient elevators since the higher the rate, the greater the incentive for producers to seek greater efficiency in grain handling and transportation. If, in the future, the WGTA is amended to include producer payments (resulting in relatively higher freight rates), more rapid rationalization could be envisaged. As well, any move to variable elevator tariffs and variable freight rates could serve to reinforce this trend.

Other factors could have an impact on the handling system. Branchline abandonment is an obvious one. Most of the branchline network is protected to the year 2000. Beyond the year 2000, it is likely that some of these lines could be excluded from the basic network and be subject to abandonment. In the event that the branchline network is reduced further it is not unrealistic to project a further decline in the number of elevators.

It is likely that the number of elevators and grain delivery points could decline by 50 percent in 1990 from current levels. In fact, a Grain Commission study(85) has projected that if the current trend continues the number of primary elevators could decline from the August 1, 1983 total of 2800 to 1409 in 1991-92. The reduction could be even more pronounced if policies designed to further improve the efficiency of the grain handling and transportation system are introduced.

The Canada Grains Council(86) has projected that receipts at primary elevators would increase to 38.3 million tonnes of grain and dockage by 1990. The projection is based on the premise that there will be an expansion in production of all major grains, especially oats and barley.

The handling efficiency of primary elevators on a system-wide basis is expected to be greatly improved with about 5 turns by 1990. Most companies are already achieving this projection. Based on the current storage capacity of the primary elevator

system, turnover ratios in 1990 would average 5.69 for Manitoba which now has 4.64; 4.92 for Saskatchewan which now has 4.60; and 4.83 for Alberta which now has 3.64[87]. However, turnover ratios could be much higher if the pace of closures is quickened. Cost factors may tend to moderate construction activity, however, and the ability of companies to generate adequate revenues to invest in plant and equipment will be a crucial factor.

Average capacity per elevator, delivery point and operating unit should continue to increase while total elevator storage capacity is expected to continue its decline. The Grains Council estimates[88] that if current trends in elevator rationalization continued, by 1990, storage capacity in Manitoba will decline by 17.4 percent to 937,900 tonnes, in Saskatchewan by 28.9 percent to 3.1 million tonnes and, in Alberta by 19.4 percent to 2.3 million tonnes. On the other hand, average elevator capacity could increase from 2,893 tonnes in 1983 to about 4,000 tonnes in 1990.

There is no doubt that further rationalization of the primary elevator system would have some impact on provincial and municipal governments as well as grain producers. Closure of elevators will imply a reduced tax base to municipal authorities and closure due to branchline abandonment could mean a possible transfer of costs to provincial governments through increased road maintenance due to longer and more frequent truck hauls. The potential impact on producers is difficult to assess. The Grains Group (IBI) Study indicated that producers would be willing to truck their grain

longer distances once they are assured of good grades and efficient service. The trend is already in the direction of longer truck hauls - a phenomenon which is likely to gather pace if the grain handling and transport system is to become more flexible, streamlined and efficient.

FOOTNOTES

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